Chapter I *FRAMEWORK*

'Mais la technique n'est peut-être que le corps, non l'âme des civilisations'.

Braudel 1979, *tome* 3, 55.

1.1 *Introduction*

My research describes the economic transitions in central Italy during the period 800 to 400 BC. It presents the development of the workshop mode of production and the means of pre-monetary exchange. Within this context the technological innovations of the 8th and 7th centuries BC are preeminent since they enhanced the process of craft specialisation. This chapter presents aspects which are essential for the rest of this study. It is basically incorporated to supplement the remainder of the text, to determine essential elements and to elaborate on the definition of the topic of research. The framework includes, for instance, theoretical background, chronology, method of study and agricultural foundations. In addition, an outline of the urbanisation process is presented as well as a general account of the economic, social and cultural development.

The period 800 to 400 BC is delimited by two historical processes. The upper limit of 800 BC represents the period prior to the arrival of foreign communities in Italy. By 400 BC Roman dominance in central Italy was well advanced and the centuries to come can be regarded as the preamble to the Roman Empire. With the fall of Veii in 396 BC and the incorporation of its territory in the *ager Romanus*, a new phase in the history of Italy is entered.[1] Thus, the period examined is historically defined though it is itself proto-historic due to a shortage of literary texts. Furthermore, the period 800 to 400 BC is considered to enclose the formative stage of the urban development in central Italy. The initial conditions of this process emerge during the 9th and 8th centuries BC while around the late 6th and 5th centuries BC this formative stage seems to be concluded. The length of the period that is four centuries, is related to the principle topic of examination which is the technological and economic transition that took place. Though the introduction of a new technique may be part of a specific moment in human history, the adaptation of the social-economic conditions of a cultural unit to this new production method, is subject to slower rythms. My research mainly deals with these slower rythms because the specific event of the appearance of a new manufacturing method is difficult to detect with archaeological means. Thus, the individual sites which are examined in the chapters II and III, each seem to illustrate a stage within a general social-economic transition.

The distinction between rythms of historical events was developed by Braudel who characterised three levels. The *histoire événementielle* entails the specific events in human history such as the list of foundation years of the Greek colonies in southern Italy. Beneath this level lie the slower rythms, the *conjonctures*, which includes the economic, agricultural and demographic cycles. Finally, there are the basic long term tendencies, the *longue durée*, which correspond with the almost unchanging landscape.[2] Within this framework technological adaptations have characteristics of *conjunctures* as well as *longue dureé*. Though the model by Braudel is important to understand the

[1] *cf.* Cornell 1995, 309-13.

[2] Braudel 1979, *tomes* 1 to 3. See also Attema and Hekman who discuss the influence of the *Annales* school on mediterranean Archaeology while reviewing some recent publications such as by Bintliff and by Knapp: Attema and Hekman 1993.

various time spans of historical events, as such it does not offer a theory for the process of culture change including the technological developments. These theories will be discussed in the next section of this chapter.

The study covers two distinct cultural regions, Etruria and *Latium Vetus*. Due to the different characteristics of both regions, which are reviewed elsewhere in this chapter, it may be possible to examine to what extent adjacent interacting societies modify one another at different stages in their development. The mechanisms of peer polity interactions can be detected in Etruria as well as *Latium Vetus* though they materialised differently in both regions. These mechanisms are reflected in warfare, competition, transmission of innovations and increased exchange of goods between the various autonomous units.

The vast cultural transition in both areas during the four centuries examined, entails economic, social, religious and political transformations. It is marked by an urbanisation process and by the development of early states. In economic terms a shift can be observed from societies with a predominantly subsistence economy to early civilisations with more varied forms of economy due to agricultural and craft specialisation. The material wealth of this period records the local application of new manufacturing techniques which made it for example, possible to copy prestiguous imports in ceramic or metal. Moreover, this wealth illustrates the significant increase in the local demand.

During the formative years of the Orientalising Period, there was a ready acceptance of innovation in consumption and production patterns. The adoption of new goods, ideas, people and techniques is an individual objective but when present as a characteristic of a society, it has considerable economic consequences. The open nature of the cultures of central Italy during the 8th to 6th centuries BC was stressed by Ampolo, Cornell and others.[3] Interregional contacts and alliances with Levantines and Greeks were comprehensive while Cornell underlines that the Etruscan influence in *Latium Vetus* is the result of a high degree of mobility and the amalgam of cultural traits.[4] Thus, the overall cultural transition in both regions is the outcome of acculturation. The presence of individuals with high status and prestige was essential for this process. It is in the burials of the elite that we find '*the most relevant evidence of interregional contact*'.[5] These contacts record the maturing transformations in which changes in consumption patterns resulted in increased demand for specific artefacts. Rathje for example, has emphasised the importance of the adoption of the *homeric* banquet during the 8th and 7th centuries BC. She based her observations on the extensive ceramic banquet service found at Ficana and architectural terracottas depicting banquet scenes. These banquets were marked by eating meat and drinking wine from a variety of newly introduced tablewares including the highly prized *keimelia.*[6] With a banquet, a host could assert his social position and express his wealth and authority. The competition which arose between the elite during the Orientalising Period from approximately 720 to 580 BC, induced the distinctive, conspicuous consumption as illustrated by the many high status tombs of the 7th century BC. This competition did affect other groups in society besides the elite. During the 7th century BC, the Etruscan tombs of individuals of intermediate status became gradually more elaborately furnished. Therefore the intensification of consumption reflects a significant economic evolution and is both a consequence of changes already established as well as the initiator of new developments. This is according to the adage that growth creates growth.[7]

---

[3] *cf.* Ampolo 1976/1977; Cornell 1995, 157-9.

[4] Cornell 1995, chapter 6. He therefore considers the Etruscan rule of *Latium Vetus* a historical misconception. I will employ throughout this study the term Levantines when I am not able to distinguish the specific Syrian, Semitic, Phoenician or other cultural traits from the Levant. For diverse views on this problem I refer to: Röllig 1992, Niemeyer 1993, Strøm 1984 and Buchner 1982.

[5] Bietti Sestieri 1992 b, 220.

[6] Rathje 1983, 1990.

[7] *cf.* Braudel 1979, *tome* 3, 36-8.

The adoption of new production techniques during the 8th and 7th centuries BC is recorded by visible differences in the use of materials and the manufacture of artefacts. Evident changes were noticed in pottery technology and in metalworking while materials such as iron, gold and ivory became used on a considerable scale. The particular properties of the advanced technologies, stimulated local craft specialisation. To those familiar with this period, this does not come as a surprise. Nevertheless, it is essential to examine the various components of these technological transformations in detail because the perception of the steps involved is usually incomplete. The observed changes in manufacture have been commented upon but mainly as superficial remarks without a fundamental discussion of either the technology itself nor of its impact on society.[8] There are ample commendable publications which deal with the transitions in central Italy during this period but which mention the technological development as a fact which makes the correlations straightforward[9] or non-existent at all.[10] The number of studies which discusses a specific technique is much less. These investigations are usually restricted to one material only, while scarcely presenting the social-economic implications.[11] The present research tries to relate the technological development to the changing social conditions. The account is based on a comprehensive description of the archaeological evidence for the development of the workshop mode of production. For this purpose a distinction is made between the primary, secondary and tertiary sources:

- Primary sources in this thesis are industrial structures and waste products,
- Secondary sources are the manufactured artefacts while
- The ancient literary texts constitute the tertiary sources.

This distinction is necessary for a detailed reconstruction of the economic and social significance of the technological development. In the past, an inspection of merely the manufactured artefacts or the literary texts has led to reconstructions which do not correspond with the evidence from the primary sources. One of my objectives is to examine the development of the workshop mode of production basically with the assistence of primary sources. Related to this mode of production is an inquiry into the formation of a market mechanism. An analysis of the means of exchange prior to the employment of money is my second objective.

In general, technology can be described as the whole of knowledge, methods and means with which mankind manipulates his natural environment in order to provide his material needs.[12] Technology described as such, can be related to every artefact studied in archaeology including agricultural remains. Agriculture became diversified during the Orientalising Period but this study will not discuss comprehensively the introduction of various new crops such as grapes and olives.[13] The increase in agricultural output is of importance for the simultaneous population growth with all its effects. This forms the background for the specialisation process which mainly examines the introduction and development of new production methods such as the potters-wheel, more advanced kilns and the working of metals such as iron, copper alloys and gold. The research depends on activities which can be traced archaeologically. In central Italy the environment rarely leaves traces of organic materials such as leather, textiles and wood.[14] Essentially, I examine traces of production methods of potters and metalworkers because their

---

[8] Moorey states in his preface of *Ancient Mesopotamian Materials and Industries* that: '*For over a century now students of ancient Mesopotamia, whether philologists, archaeologists, or ancient historians, have been relatively little concerned with systematic study of local crafts and industries. This is most surprising in the case of archaeologists, since the debris of manufacture is a primary source of information for them whether it be flint tools or pottery, copper weapons or faience ornaments*': Moorey 1994, v. This account equally applies to the situation in central Italy or other areas in the Mediterranean.

[9] *cf. Formazione* 1980; Meyer 1983; Anzidei *et alii* 1985; Bartoloni 1989.

[10] *cf.* Cornell 1995.

[11] *cf.* Formigli 1993; Cuomo di Caprio 1985.

[12] Bitter 1991, 83.

[13] *cf.* Anzidei *et alii* 1985, 213; *Formazione* 1980, 31-3, 128, 178. See section 1.5.

activities have been preserved and recorded.

The social position of craftsmen in central Italy from 800 to 400 BC is subject to a constant reassessment. Their social standing has been labelled by various authors as privileged court-craftsman[15], slaves[16], the socially inferior members of the plebs[17] and members of a middle class.[18] The designation of a servile status to craftsmen during the Orientalising Period is traditionally based on the elitist view of Classical Greece and the corresponding division between *agathoi* and *kakoi*.[19] This attitude derives from ancient literary sources which universally frowned upon manufacture and commerce. However the situation in central Italy during the 8th to 6th centuries BC requires more scrutiny and cannot be equated with circumstances in Classical Greece nor with conditions during the Roman Republic. All the above mentioned social positions need to be considered for the period 800 to 400 BC but not as a single, unambiguous attribution of class to artisans but rather as a range of possibilities. I stress, however, that one cannot ascribe craftsmen to a social class in a society that is being stratified itself. It is attested that social strata were defined in central Italy during the 8th and 7th centuries BC.[20] Thus within these centuries there is a transition from social differentiation which is based on personally achieved status to ascribed social class. It has to be acknowledged that the social position of craftsmen during the 8th and 7th centuries BC needs to be examined within this stratification process. I mean that one cannot assign a social position to craftsmen such as a middle class or a slave position, during a period in which these social strata were actually being established. The changing social position of those who were involved in industrial activities is another aspect I will touch upon. Their social transformation will be related to the products they made as well as to the layout of the workshops and the conditions in which they had to work and live. The internal development of communities has to be incorporated into the analysis of social change. For example, I doubt that craftsmen can be assigned to a servile status during the Orientalising Period if it can be established that they obtained during the 6th century BC a middle class position. This topic of the changing social prominence of craftsmen will be examined in more detail elsewhere in this study. At this stage I would like to examine some of the complications concerning social reconstruction from archaeological evidence.

A fundamental problem for the 8th to 6th centuries BC is to establish the advance of sedentary craft specialisation. Both the itinerant as well as the sedentary craftsman will leave similar archaeological traces such as

---

[14] A list of textiles in central Italy is presented by Stage: Stage 1991. Artefacts from wood are preserved in waterlogged conditions and were for example, recovered at Pyrgi and at the Giglio shipwreck: Colonna *et alii* 1988/89, 111-21; Bound 1991. See also Tamburini on wood from Gran Carro: Tamburini 1995.

[15] Frederiksen 1979, 290.

[16] Colonna 1975, 184-190. Colonna ascribes two potters' inscriptions dated to the late 6th and 5th centuries BC, on onomastic grounds to slaves. He states that *Meistersignaturen* prior to this period do not refer to potters as slaves in the classical sense of the term though he considers them to be of lower rank.

[17] Alföldi 1975, 8.

[18] Cristofani 1993, 505.

[19] *Agathoi* are considered to be well-born and members of the Greek upper class whose position was based on the ownership of land while the *kakoi* are base-born opportunists who could be involved in manufacture: Starr 1977, 121-30. According to Finley, artisans had a lower status than a working farmer while slaves were widely used in manufacture: Finley 1981, 5, 15. The low status of craftsmen is, however, based on ancient literary texts from the 5th century BC and later. These texts have to be used reluctantly while describing conditions during the 8th to 5th centuries BC. The perception of manual labour in the history of Greek archaeology has been subject to anachronism: *cf.* Morris 1994 a. He discusses the history of the discipline while considering aspects such as elitist perspective, archaeology as *the handmaid of history* and the standing of ancient art. These aspects have had considerable impact on the development of Classical studies.

[20] *cf.* Bietti Sestieri 1992 b, 208-11, 241-2, 248-52.

furnaces and industrial debris. These traces require interpretation which cannot always be straightforward in proto-urban contexts. There is no unilinear development of initially an introduction of knowledge and techniques which subsequently became locally aplied thus leading to more centralisation and urbanisation. In archaeology, the dispute about the itinerant versus the sedentary craftsman is not restricted to central Italy between 800 and 500 BC. It is also encountered in other periods and regions during the initial phases of centralisation. For example, the interpretation of the production traces in the early medieval trading centres in Northern Europe such as Haithabu, Ribe and Birka, is closely connected with the reconstruction of initially the sites as a whole and secondly the nature of the activities of the craftsmen. These reconstructions are usually biased towards an interpretation which incorporates either part-time sedentary or itinerant craftsmen depending on the author and the craft discussed.[21] Thus, at Haithabu which was a major trading and production centre, the manufacture of antler combs is either reconstructed as a part-time specialisation[22] or as a craft performed by itinerant artisans.[23] Artisans in a pre-urban context might work with various materials and combine their craft with other activities. This is seemingly hard to imagine partly because of our present, highly specialised society but also because of the discipline of archaeology itself. The field of classical archaeology abounds in artefact studies dedicated to one specific material or to one particular style of decoration or artefact-type. This creates divisions in materials and artefacts which in reality probably did not exist.

A model advocated by Bonghi Jovino differentiates between mono-functional and poly-functional workshops and reflects conditions during the 6th and later centuries BC. In the mono-functional workshop, the craftsman primarily works with one material and applies a restricted number of techniques. The artisan is either a coppersmith, coroplast or potter. This may result in products of high quality. A poly-functional workshop is organised on a semi-industrial scale with a significant number of workmen who may handle various materials such as metals and clays.[24] Whether this specific model is supported by the primary evidence from central Italy has to be examined though the archaeological evidence of the 7th century BC strongly suggests the combination of materials such as copper alloys and iron in one workshop.[25]

A study of the degree of craft specialisation and the possible output of a workshop can help to assess whether the associated structures are related to itinerant or sedentary craftsmen. An illustration of this principle can be found at various rural sanctuaries in central Italy where traces of production were discovered. Some of these traces point to workshops throughout the existence of the sanctuary.[26] Thus small industrial centres might arise around sanctuaries in the countryside where part-time specialisation could be combined with farming, the preservation of the religious structures or other activities. Another option is the existence of itinerant craftsmen when it is not possible to infer additional production. Itinerant artisans might be involved in the manufacture of architectural terracottas especially in those cases where the fabric of the terracottas cannot be related to other wares at the site. In chapter II the production of ceramics and its implications will be examined in detail.

The complication of sedentary versus itinerant craftsmen evolves around the extent of the urbanisation involved. In proto-urban societies there are various options for craft centralisation. In these circumstances, diffusion can be

---

[21] Oltmanns 1995.

[22] Ulbricht 1978, 116-22.

[23] Ambrosiani 1981, 40-54.

[24] Bonghi Jovino 1990, 44-54. In Capua for example, she noticed for the 6th and 5th centuries BC a direct correlation between artefacts made from clay or from copper alloy.

[25] This topic is discussed in chapter III.

[26] *cf.* Edlund 1983; Bouma 1996, part III, 14, 55, 79-80. Bouma reports a workshop at Anzio and Minturno which produced amongst others ceramic votives while a sacrificial layer against the temple of Vesta in Rome contained evidence for metallurgical activities. Monacchi suggests that the tools among the finds of the votive deposit of Grotta Bella (Terni), may indicate manufacture at the sanctuary: Monacchi 1988, 83. It is noteworthy that these examples are all dated to the 5th and later centuries BC.

anticipated and is characterised by for example:
- combinations of crafts by a single artisan or
- economic centralisation with settlement patterns around
1. resources,
2. natural harbours, *emporia*,
3. sanctuaries or
4. homesteads of the elite.

On the other hand nucleation of workshops indicates market and urban conditions but nucleation is not feasible for some of the settlements which I examined. In the early stages of urbanisation it is common to find the options mentioned above, side by side, which implies that in certain instances there is not enough evidence to imply the existence of settled, full-time craftsmen. Therefore it is essential to study the accompanying archaeological contexts. This requires that the dispute about sedentary versus itinerant craftsmen is incorporated in the presentation of the selected sites which provided primary evidence for industrial activities.

Other topics of research that are a recurrent theme in this thesis, are quantification and the attribution of function to industrial structures. A study on economic transformations with hardly any quantification is a horror for modern economists but the possibilities for quantification are restricted within classical studies. Starr discussed the restrictions that resulted from this limitation for the economic development of ancient Greece. He reports, however, that quantification was rare until the 18 century AD. Moreover, an account of an economic development can rest heavily on qualitative evidence.[27] Occasionally, I introduce quantifiable information in order to provide an indication of scale. The size of the urban population, the number of craftsmen or the volume of output can be guessed but the figures presented cannot be considered literal. I present figures and numbers as a suggestion of range. A certain vagueness can also occur when function is attributed to industrial structures. The function of kilns and furnaces is evident but the function of the buildings associated with these structures is less clear. For example, one of the oldest architectural workshop structures in central Italy is the stoa-workshop at Poggio Civitate dated to the late 7th century BC.[28] This structure was extremely large and elaborately decorated with terracottas which might indicate that it served additional functions as well.

In general, the interpretation of the workshop remains as suggested by the various excavators, was accepted in this study though at intervals I considered a reinterpretation of the archaeological evidence necessary. I will indicate in the text where I have revised the reading of the archaeological findings.

Finally I will summarise in this introduction the purpose of this chapter. It was written in general terms in order to present a framework for my research objectives.[29] These objectives involve:

---

[27] Starr, 1977, 13-4, 37-8, 45-6, 104-5. He suggests a threefold increase of the economy during the period 700 to 500 BC. For Athens the number of 30,000 adult males is given around 480 BC. The total population of Athens including slaves and metics might have been scarcely more than 150,000. For the 6th century BC it is suggested that 6,000 persons were involved in the industrial and commercial sectors including their wives and children.

[28] Poggio Civitate is discussed in sections 2.6.6 and 3.6.8.

[29] Though this chapter is written in general terms, aspects of the individual sections have not been published before. Thus in section 1.2, I argue that the field of technology is insufficiently incorporated into the theoretical framework of contextual archaeology. Therefore this theory can, in my opinion, not be considered as a general archaeological theory which includes all facets of the archaeological discipline. In section 1.3, I am able to present two sites in central Italy with high precission carbon-14 dates which indicate that a high chronology for the early Iron Age may be valid. In the sections 1.5 and 1.6, I emphasise for example, that the introduction of polyculture and the settling of the countryside around individual proto-urban or urban centres during the 7th and 6th centuries BC, must have lead to an increasing market function of these centres. In section 1.7, I present a hypothesis which relates the role of emporia to other regulating measures of the establishment in central Italy in the decades around 600 BC. The last example I would like to present here derives from section 1.8. I stress the significance of the slow pace of state formation processes in relation to the definition of private property. This definition is essential for the advance of a market economy since it

1. the examination of the development of the workshop mode of production by analysis of the primary industrial evidence;
2. a study of the means of exchange, and
3. a reconstruction of the changing social position of artisans by an inquiry into the artefacts they made as well as their working conditions.

The length of the framework is due to my opinion that the economic transitions that took place in central Italy during the period 800 to 400 BC, can only be studied and understood within the context of the general change of society. The organisation of production intensified significantly during these centuries. An account of this intensification in relation to the lasting social-economic and cultural transition, is at present not available for this interval that bridges prehistory with a more historical period.

1.2 *Theoretical background*

The history of archaeological thought can be summarised as firstly form and period, secondly, function and process and recently, meaning and context.[30] In the theoretical debate about the direction of archaeological studies these three stages are often presented as opposites while archaeology as a discipline is essentially promoted when all aspects are incorporated. The following section of the framework deals with the theoretical background of this study while specifying the position of technology and economy in the different theories. This has led to a selection of theories in which these aspects are emphasised. Grand schemes such as Marxism, the processual approach and contextual archaeology are discussed first.[31]

Marxism

A theoretical model for cultural change was advanced by Karl Marx who influenced archaeologists from the 1930s onwards. The Marxist approach has contributed extensively to an understanding of the correlations between techniques and society. Technology was examined both in theory and as a formative and foremost vehicle for social transformation. According to Marx, the organisation of labour is of key importance for determining the social structure. This organisation is directly influenced by the introduction of new technologies. However new technologies do not only bring about social and political changes but are themselves the result of specific social conditions. The existing social structure moulds the innovations feasible. Marxist archaeologists claim that change in societies is based on the resolution of internal differences. Therefore social change in complex societies derives from internal contradictions and conflicts. This principle indicates that individuals act as manipulators of resources and people in order to strenghten their own position within their social group and society. The emphasis on contradictions is based on theories of Hegel who proposed as an 'eternal principle for historic events', the existence of thesis and anti-thesis which resolves in a synthesis creating in turn its own dispute. One of the characteristic conflicts according to Marxist explanations, is based on the friction between the forces of production and the relations of production while being at the same time reciprocal. The forces of production include all forms of technology and resources whereas the relations of production indicate the ways individuals are organised in order to produce and distribute artefacts or labour. Therefore the relations of production incorporates mainly economic, but

---

facilitates exchange activities between the different classes because it brings together craftsmen, merchants and consumers irrespective of their social position unlike reciprocal and redistribution mechanisms which rely more on social-economic interdependence.

[30] Bloemers and van Dorp 1991, 72.

[31] The presentation of the theoretical background to this study is primarily limited to the principles of Marxism and the systems theory because in both theories technology is a basic component. In recent archaeological thought which is directed towards meaning and context, technology is insufficiently incorporated as will be indicated in this section.

also aspects of social, behaviour. The conflicts which arise between these forces create change within a society and emerge as a struggle between the various classes.[32]

There is a dispute about hierarchy concerning the impact of technology on cultural development. Can technology be considered primary in social change, do the social relations of production dominate or do they interact mutually?[33] This debate cannot be resolved in this study but again, I can scarcely detect any reason to deliberately favour one feature of society over another when it is agreed that they are strongly interrelated. The debate on hierarchy is an example of theoretical controversy which creates opposite extremes of matters which are essentially composites.[34] Thus at one stage, traditional Marxism considered the whole system of knowledge and belief of a society to be substantially directed by its economic base while nowadays Marxists argue that the social relations of production are primary or at least interrelated with the forces of production.[35] The correlation between a society and technology is especially significant in pre-industrial, non-capitalist societies because these societies are structured along other lines rather than primarily on economic activities. According to Marx, the ultimate goal of an unadultarated capitalist system is that societies become structured along economic activities by exploitation. This will not have been the conscious goal of most pre-capitalist, early state societies.

Systems theorie

Another model for cultural change in which technology was recognised as one of the principal facets was advanced by Renfrew. Based on previous publications of for example, Wiener, Binford and Clarke, Renfrew described in *The Emergence of Civilisation* the process of culture change as changes in subsystems. He distinguished five aspects which are the subsistence, technological, social, symbolic and trade/communication subsystems. One of the characteristics of these subsystems is their interrelation. Each subsystem is, therefore, semi-autonomous because some of its features can be related to other subsystems while others remain distinct.[36] Change in one of the subsystems can be counteracted in another. When one part of the system changes, the others adjust and conform to return to *homeostasis*. Thus, the various subsystems tend to be in equilibrium which is based on negative feedback because the resistance to change in one subsystem establishes stability. Homeostasis is a reflection of the conservative tendencies in civilisations. With progressive change, the subsystems interact positively resulting in growth and development. Thus, some of the activities in one subsystem are relevant to those in other subsystems. The general development of a culture is the result of conditions in which innovations in the various subsystems reinforce each other. Positive feedback between at least two subsystems amplifies and interlocks the transformations. This can be considered as a multiplier effect which is the mutual interaction in different fields of activity.[37] Central Italy, especially during the period 800 to 500 BC can be examined as one of the examples of a society in which the multiplier effect was in operation due to the vast transformations in the various subsystems.

Though the systems approach incorporates a communication and trade subsystem, it usually relates to a specific cultural unit. It is in practice primarily a model that explains changes within a unit. Renfrew, however, stresses that transformations are not only caused in a endogenous and interpretation mode but that they are also the result of

---

[32] *cf.* Renfrew and Bahn 1991, 412-5; Trigger 1989, 216-27, 242-3, 259-63.

[33] *cf.* Hodder 1986, 57-61, 91; Hodder 1992, 25; Trigger 1989, 220-1, 290-4, 340-3, 401-4.

[34] Renfrew and Cherry summarised the debate on hierarchy in their preface: '*In our view it should not be necessary to make a choice between an approach favouring the symbolic and the stylistic on the one hand, and one favouring the material and the technological on the other. Both aspects are seen as acting and interacting within a specific social matrix*': Renfrew and Cherry 1986, viii.

[35] Renfrew and Bahn 1991, 414.

[36] Friedman and Rowlands 1977, 203.

[37] Renfrew 1972, 19-28, 476-504.

exogenous change through contacts between neighbouring cultural units or polities.[38] The changes in the technological subsystem in central Italy during the period discussed, is mainly the result of exchange of information between neighbouring polities. The extent to which these technological changes are applied within a polity can be considered an endogenous transformation.

As a model the systems approach has been criticised since it subdivides a culture into separate aspects which in turn forms an unit as if the whole equals the sum of its parts.[39] The systems theory reduced to this level, will indeed present a mechanical view of culture since individuals and their contexts scarcely seem to be involved. Societies appear to be studied as an utilitarian set of cause and effect without taking into account the individual behaviour. According to this view the application of the systems theory will eventually lead to reconstructions of cultures without accounting for what really happens within societies for it is primarily concerned with the functional correlations between various subsystems.[40] This comment is acceptable for those studies which do not incorporate the autonomous development within subsystems. Autonomous developments might occur on an individual level such as the adaptation of a technique by a specific artisan. This individual level is to a certain extent included in this research by presenting particular archaeological contexts. The examination of these contexts covers not merely techniques and crafts of individual artisans but also their surroundings and social-economic condition. However archaeological interpretation based on the behaviour of individuals can result in severe fragmentation. Additionally, man makes choices and a constant conjunction of events will be rare when individuals are involved. This aspect of choices which are made with respect to technological changes, has been the topic of a publication in the series *Material Cultures*. The guiding principle in this book is the idea that societies select new technologies which means that they can adopt these techniques or reject them. This selection depends mainly on cultural values and social relations and much less on the intrinsic advantages of the new technique itself. In *Material Cultures* various anthropological and archaeological examples are recorded which indicate that technological changes are subject to considerations that are not technical in character.[41] These examples make the debate whether change can be regarded as caused by external factors or by internal development[42], theoretical since they coincide in many cases. Cultural development can be analysed from an internal point of view which stresses systemic interdependence and continuity rather than the discontinuity induced by diffusion. With respect to technology, changes can be triggered off by external factors or by internal developments but they cannot be applied successfully by individuals without:
- being the result of specific social-economic conditions and,
- some additional changes in society.
This complies with the theory of Marx and the systems theory.

Other criticism of the systems approach concerns the balance between specific and general explanation. For some scientists, the systems approach is associated with generalisation because it explains patterns of events. Hodder for example argues in favour of a greater emphasis on the specific archaeological context and seeks to know more about the surrounding particular information.[43] Nevertheless, in reality it is difficult to conceive any explanation of cultural transition which does not incorporate specific information as well as general outline.[44] Moreover, this study is based on the complex transitions associated with the urbanisation process and the

[38] Renfrew 1986 a, 5-6.

[39] *cf.* Gibbon 1989, 111-4.

[40] Renfrew and Bahn 1991, 422.

[41] Lemonnier 1993.

[42] *cf.* Gibbon 1989, 112-3.

[43] Hodder 1986, 146.

[44] Renfrew and Bahn 1991, 415-6.

development of markets. For intricate processes such as these, it might be valuable to differentiate occasionally between the specific subsystems.

Both theories, the systems approach and the principles of Marxism, are concerned with change in societies as a whole. Both seem to view societies as arrangements which contain tendencies that promote and oppose change. The main difference lies in the perception of the dynamism behind transformations. The systems approach is based on *homeostasis*, the adaptive responses while the Marxist approach emphasises the internal conflict within societies. In reality it is hard to imagine transformations which do not incorporate both tendencies. Societies with merely internal conflicts and without self-correcting mechanisms are bound to change by revolution and force whereas sudden radical transformations within a culture are comparatively rare in history, especially in the history of technology and economy. Therefore I would like to differentiate between economic and political revolutions. Economic revolutions such as the industrial revolution are usually long-term events affecting the social organisation and, therefore, culture in general while political revolutions are often characterised by incidents with considerable consequences. The period 750 to 650 BC has been specified for Greece as the Orientalising revolution.[45] The Orientalising Period in central Italy is characterised by comparable events but with simultaneously the acculturation of Greek traits. However both periods in Greece and in Italy represent long-term phenomena lasting about one century or more. Therefore this formative stage illustrates essentially a social-economic transition accompanied by cultural modifications. These are primarily based on adjustments which coincide with the prevailing acculturation process.

Contextual approach

A third general theory is proposed by Hodder who can be considered to be the representative of the archaeology of meaning and symbols. He wrote that '*Structures of meaning are present in all the daily trivia of live and in the major adaptive decisions of human groups. Material culture patterning is formed as part of these meaningful actions and it helps to constitute changing frameworks of action and belief*'.[46] On a theoretical, general level this cannot be denied but on a practical, archaeological level, many questions remain unanswered. In view of the present study it remains puzzling how to relate these structures of meaning to the various, explicit processes of technological transformations. Traditionally, technology is a component of many archaeological studies due to its materialistic affiliation. Proportionally, technology and economy have been more widely examined than for example, other subsystems of society such as the aspects idea and belief. On the other hand the lack of detailed technological research makes many of these discussions *gratuit*.

The quotation from Braudel at the beginning of this chapter implies that the link between the materialistic and ideational remains enigmatic. Hodder affirms that '*both as archaeologists and ethnoarchaeologists we need to have the confidence to delve into the practical world of technological operations in order to build theories about the embodiment of meanings and thus about the relationship between material practice and conceptual structure*'.[47] He concludes that even for the early periods, productive processes are well known to archaeologists and that this forms the basis for interpretation. '*The only limitation here is our lack of theoretical knowledge about the way in which*

[45] Burkert used the phrase 'Orientalizing Revolution' to describe the Near Eastern influence on the comprehensive social-economic changes in Greece during the period 750-650 BC: Burkert 1992. It is thus a 'revolution' which lasted about a century. His book pursues the idea that the Greeks were influenced by eastern models to a significant degree. The title of the English translation of Burkerts' originally, German book is *The Orientalizing Revolution* and is inspired by Boardman who wrote that '*the true Orientalizing revolution on the Greek mainland which was widespread and lasting, was a phenomenon of the 8th century and it was created by exposure to the techniques and products of North Syria and beyond, rather than those of Phoenicia. It is a material revolution accompanied by influences of a broader cultural nature, in religion, myth, literature, science and perhaps law*': Boardman 1990, 185. This description of events could also apply to central Italy: *cf.* Markoe 1992, 79-84.

[46] Hodder 1992, 25.

[47] Hodder 1992, 211.

savoir-faire, know-how, everyday practical knowledge is organised and related to higher levels of abstract symbolic thought'.[48] This still leaves the theoretical relation between the symbolic and economic structures to be defined. Because this relationship has not been an integral part of this research, I doubt whether I can contribute to this debate. It is my conviction that occasionally it is possible to relate both structures on a factual level for specific contexts. Either the archaeological contexts are revealing or the sites involved have a near complete set of information. A reconstruction of the activities performed at such sites has to be holistic and does incorporate among others, both the technological and the ideational subsystem. Such reconstructions will demonstrate the correlation between both fields as has been illustrated in the publication in the series *Material Cultures* which is mentioned above. In this publication, entitled *Technological Choiches, Transformation in Material Cultures since the Neolithic*[49], various ethnoarchaeological, ethnological and even modern examples are presented which invariably emphasise the close relationship between the technological subsystem and other aspects of society, especially the subsystem of ethics and ideas. This relationship finds a present-day analogy in the discussions about information-technology and genetic manipulation. The various examples in *Technological Choiches* also confirm the hypothesis that patterns between the technological and ideational, are extremely diverse. This makes it dubious whether both can be related on a general, theoretical level. My doubts are also expressed by Trigger who has formulated that '*it is no longer possible to maintain that symbolic aspects of material culture are merely a passive reflection of more pragmatic behaviour. Yet how can the archaeologist determine in specific cases, except pragmatically, whether the relationship is one of reflection, inversion, or contradiction*'?[50] Lemonnier who is eager to attribute meanings to technological developments, is even more explicit: '*we are obliged to admit that, in fact, we do not know much about these systems of meaning in which artefacts and technical processes are involved*'.[51]

The discussion of the grand schemes of Marxism, systems theory and contextual archaeology positions technology in a wider framework. They examine the theoretical place of technology within the evolution of societies or within specific contexts. A correlation between these theories and the methodology of the archaeological discipline in connection with technology and economy, is indispensible. One method was formulated by Hawkes who emphasised the primary study of technological features.[52] *Hawkes' hierarchy* or ladder is a theoretical grading based on the discipline of archaeology itself. His model is a scale of ascending difficulty involving limitations of the archaeological evidence. This evidence is foremost suitable for reconstructing prehistoric technology and economy. Subsequent stages involve the study of socio-political organisation and religious beliefs which should be based on a detailed description of prehistoric technology and economy. Technology is, therefore, an elementary feature of the model presented by Hawkes. Renfrew and Bahn do not accept the argument that technology should be studied first because it can be related directly to the artefacts excavated. According to them the study of the social organisation has priority.[53] Trigger, however, emphasises the intrinsic value for archaeologists of the methodological ladder devised by Hawkes, because human behaviour is essentially directed by external constraints.[54] In my opinion, the term hierarchy has led to confusion about Hawkes' intentions and should not be applied to his ideas. In his article, he does not use the term hierarchy but is primarily concerned with the organisation of archaeological research. His

[48] Hodder 1992, 211-2.

[49] Lemonnier 1993.

[50] Trigger 1989, 351.

[51] Lemonnier 1993, 17.

[52] Hawkes 1954.

[53] Renfrew and Bahn 1991, 150-1.

[54] Trigger 1989, 392-6.

considerations concentrate on the relation between matter and culture. Most archaeologists will not deny that their primary information is material and factual. This makes it relevant to describe them. Hawkes suggests that the technological aspect needs to be incorporated in this description. The translation of the actual facts to other aspects of civilisation can be miscellaneous and random. As mentioned above, these relationships are extremely divers and, therefore, difficult to reduce to a general, theoretical level. For every culture and period it may be necessary to develop a specific model for the relationship between production, social organisation and religion.[55]

Hawkes' model is based on his optimistic view that the nature of both technological studies as well as material sciences is straightforward. This opinion is not supported by the present lack of systematic examinations of the technological subsystem. The implementation of technology is not a process involving successive steps of static practicalities requiring common knowledge. Besides, it is unrealistic to suppose that archaeologists are familiar with the variables of technological procedures. For example, a key question in archaeology is the provenance of raw materials. An examination of raw materials is commonly established by archaeological science, that is archaeometry.[56] A scientific relationship between artefact and raw material is often complex and for many archaeological substances even impossible. Although advance in archaeometry has been made, a substantial number of archaeological questions concerning origin remain unresolved because these studies require substantial resources and fundamental research.[57] Thus, the superficial basics of resources, processing techniques and finished artefacts might be understood on an abstract level but the relationship of a specific cluster of artefacts to its material provenance and the exact manufacturing process, remains in most cases unknown.

Hawkes considers that not only provenance studies, but also technological investigations are a component of archaeometry and thus science based. These sciences produce figures, tables, appendices and other external, hard information which requires a more comprehensive interpretation, especially when the results need to become relevant for archaeologists. However this interpretation involves usually an approach which derives from the humanities. These considerations are inextricably related to the multidisciplinary character of archaeometry but may result in a confusion of arguments unless the communication between scientist and archaeologist is transparent.[58] I, therefore, dispute the idea of a hierarchy in which technology is placed on the 'lowest' level *because the reasoning employed is basically simple.*[59] This may apply to the descriptive phase of archaeology but not when technological developments are positioned within a wider context. For this type of research, a characterisation in lower and higher echelons is inappropriate because:

- the correlation between technology and economic implementation is intricate which is illustrated by the random nature of technological rejections and adoptions[60] and by the manifold specific variations in craft specialisation,[61]
- the archaeological discipline has not provided an adequate corpus of technological evidence. Archaeologists have neglected this aspect to such an extent that nowadays simplistic views on technology prevail. An illustration of this situation is presented by the technological studies of early iron artefacts. Pleiner states that: '*the shortage of archaeological iron objects and the very limited technological investigations carried out on them makes it essential*

[55] Godellier 1977, 10.

[56] For this argument I oppose the Sciences to the Arts.

[57] Tite 1991.

[58] In his publication Tite mentions the necessity of communication between scientists and archaeologists several times while presenting arguments for this prerequisite: Tite 1991.

[59] Hawkes 1954, 161.

[60] Lemonnier 1993, 6-9.

[61] see section 1.6.

to turn to literary sources'[62] and Kilian wrote in 1983 that iron has been rarely published.[63] Both authors refer to the situation in Greece but a similar account can be presented for Italy or other regions. The present study will almost double the available technological information on early iron tools in central Italy while employing metallographic methods. Even with this increase it has not been possible to present a comprehensive account on specific smithing techniques that had been mastered by the smith around 600 BC.

This discourse on Hawkes' ladder is followed by additional considerations concerning the methodology of technology in archaeological studies.

The technological subsystem has been characterised by Renfrew as '*the activities of men which result in the production of material artefacts. The components are men, material resources and finished artefacts*'.[64] Technology itself has been described in general terms as the whole of knowledge, methods and means with which mankind manipulates his natural environment in order to provide his material needs.[65] A specific technology consists of a collection of artefacts, behaviours and knowledge which is transmitted from generation to generation. The technological knowledge involves three aspects:

- procedure of actions,
- teaching structure and
- physical-chemical consciousness.

The physical-chemical consciousness implies for pre- and protohistory that craftsmen attempted to solve certain problems by trial-and-error.[66] Experiment and technological experience increases the practical knowledge of an artisan. This knowledge is his exclusive property and is transmitted through instruction. The physical-chemical consciousness and teaching structures are usually not included when archaeologists examine the technology of a society. Technology is often restricted to the procedure of subsequent actions from raw materials to finished product.[67] The sequences of actions or *chaines operatoires* have been formulated by a number of French academics as a series of ideas.[68] The actions are guided by three types of knowledge. The general knowledge or *connaisance* classifies, correlates and signifies artefacts and their functions. This general knowledge can be distinguished from actual know-how, which incorporates knowledge of material properties and the ability to evaluate the manufacturing process. This know-how is subsequently translated by the artisan in generative know-how or *savoir-faire*, which involves the motor skills and the sequences of hand movements.[69] Thus the process of manufacture starts with a concept of the artefacts to be made and the materials to be used, followed by the actual production steps.[70] A transformation of the technological knowledge of craftsmen may be caused by:

- a change in demand concerning the function of artefacts. This change can involve mechanical, social or ideological

---

[62] Pleiner 1969, 20.

[63] Kilian 1983, 131.

[64] Renfrew 1972, 22.

[65] Bitter 1993, 83.

[66] Schiffer and Skibo 1987, 595.

[67] Hawkes was mainly concerned with this aspect of technology. The supposed hierarchy within his model is neither supported by the presented subdivision of technological knowledge because some of the aspects of technological knowledge are difficult to assess such as the trial-and-error experiments.

[68] *cf.* Pelegrin 1990; van der Leeuw 1993, 238-44.

[69] Pelegrin 1990; Hodder 1992.

[70] van der Leeuw 1993; Nijboer 1993.

function,
- trial-and-error experiments,
- economic processes such as competition which stimulates the development of techniques and experiments, the manufacture of artefacts for specific functions, the development of more effective production processes and standardisation of style.[71]

For central Italy these three motives can be recognised especially for the 7th and 6th centuries BC. The competition between individuals and social groups in Etruria and *Latium Vetus* as well as a change in demand concerning the function of artefacts, were deduced from transformed consumption patterns and the elaborate furnishing of tombs. These aspects which will be examined in the next chapters, testify for the close relationship between technological and cultural transitions.

The role of technological change in economic development is acknowledged as activator since technological progress increases efficiency as well as advances the development of new products and sevices.[72] The factual introduction will be only touched upon in this study. The primary production features discovered by archaeology usually represent a stage in the development of the economic application of a given technique. The adaptation of an economy to a new technique is one of a continuing process of fluctuations. These fluctuations include the accompanying settlement patterns. Thus primary evidence of production can relate to individual, household, workshop or even village industries while the production activity can be on a part-time or full-time base or executed by an itinerant or sedentary craftsman. A rudimentary distinction between the various techniques examined in this thesis evolves around a ranking of its economic implementation. Fundamental changes in techniques or the introduction of new materials which involve common, everyday artefacts such as pottery or iron tools ultimately have more impact on society than changes in techniques which involve luxury goods and precious materials such as gold. The new production techniques introduced in central Italy during the 8th century BC were originally used for the production of wealth items and status markers. Some of these new production techniques eventually became employed for the manufacture of subsistence goods. For example, iron changed from precious to base metal during the period 800 to 500 BC.[73] This transition had far reaching consequences for the relations of production, that is the social organisation of labour.

New technology that affects the essential needs of individuals is crucial for a general development of societies. These essential needs involve food, shelter, clothing and tools used for the production and preparation of food. They are the necessities which are required for personal survival. A distinction of techniques can, therefore, be based on a ranking of the materials and artefacts involved in combination with its eventual rate of implementation. This ranking is reversed to the grading commonly applied by archaeologists who consider materials such as ivory and gold more indicative for maintaining and generating status than more common, everyday materials such as iron tools or common household pottery. Thus, the introduction of the granulation technique in goldworking in central Italy during the late 8th and 7th centuries BC caused little social-economic change since it involved status markers and is concerned with existing social stratification. Only the strife for such status markers increases the demand which may cause economic change. Competition within the elite group can affect society considerably especially when it occurs at the expense of the lower social echelons. Debt bondage did occur but it appears that the general economic growth from the 8th to the 5th centuries BC could accomodate the differentiated though intensified material needs of a considerable group of people in central Italy.[74] Social-economic change is more affected by the gradual introduction

[71] Schiffer and Skibo 1987.

[72] Inkster 1991, 2-3.

[73] see section 3.4.

[74] This topic is discussed while evaluating the archaeological data on workshops in chapter V.

of techniques involving the manufacture of common subsistence goods. These techniques include new pottery production techniques such as wheel-turning, modelling with moulds and the employment of advanced kilns. The application of the granulation technique involved few artisans while a restricted number of people were capable of acquiring their products. The local application of the granulation technique can be considered as confirming existing social hierarchy. The introduction of iron as the main metal for tools, and thus replacing copper alloy tools, also occured during the 8th and 7th centuries BC. This transition did have a profound effect on society for various reasons. Agricultural labour for example, could become more effective because iron tools have improved working properties when compared with copper alloy tools. Besides, the manufacture of workable iron is more time consuming than the production of copper alloys whereas the demand increased. The associated rise in labour required a different organisation in order to meet the demand. The development of the use of iron between 800 and 400 BC in central Italy is a typical example of the introduction of a fundamentally new material and production technique which subsequently became a subsistence good and thus vastly common. This led to lower costs. The rapid decrease in the value of iron has been observed for both Greece and the Near East[75] and can be attested for Italy by archaeological means.[76] Therefore the introduction of new techniques and materials which became applied to subsistence goods instigated growth of production and labour which consequently transformed the social-economic structure of central Italy significantly.

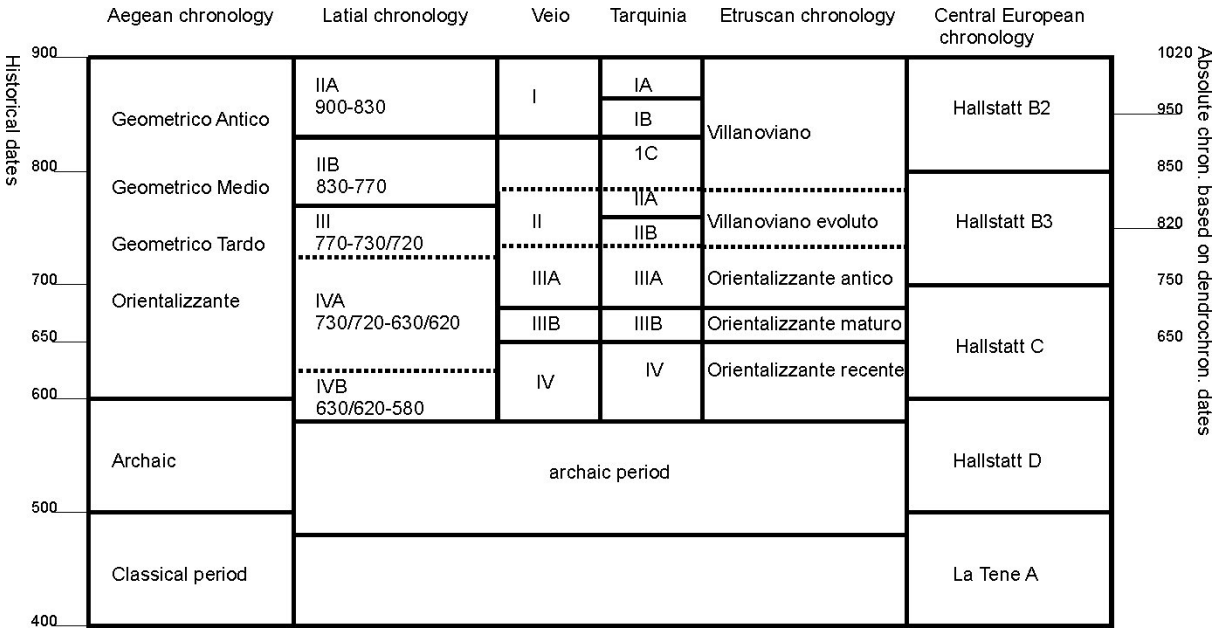


Fig. 1. Chronological chart of central Italy, the Aegean and central Europe with an indication of the historical dates as well a the dendrochronological dates.

1.3 *Chronology*

The chronological framework applied in this study, is predominantly based on absolute dates. The period discussed is protohistoric and, therefore, these dates represent stages and not distinct years.[77] The absolute dates derive from

[75] Pleiner 1969, 15-7, 29; Moorey 1994, 287-91.

[76] Aspects which are related to the introduction of iron will be discused in more detail in section 3.4.

[77] I will seldom employ historic years in this study. Exceptions are 474 BC in which the Battle at Cumae was fought or 396 BC in which,

excavation reports and were adopted instead of the characteristic periods of individual sites or cultures because these periods are not uniform (Fig. 1). For example, period II at Veii corresponds approximately with period III in *Latium Vetus*. An account of the economic development in central Italy which is based on the periods of the individual sites or cultures would have become complicated and, therefore, I prefer to present absolute years. I do, however, employ general terms such as Orientalising or Archaic period because these classifications coincide with specific stages in Etruria as well as in *Latium Vetus*. The Orientalising Period is commonly dated from 720 to 580 BC while the Archaic period roughly corresponds with the 6th and early 5th centuries BC.

It can be deduced from Figure 1 that the major problem for the absolute chronology of the Italian Iron Age, is the dating of the 9th and 8th centuries BC. Differences between on the one hand the traditional dates and on the other hand the chronology based on dendrodates of central Europe, escalate to more than a century. Consequently, the chronology of the Iron Age in central Italy will be examined in more detail.

Chronological studies in archaeology can be subdivided into relative chronologies based on typological seriation of artefacts, mainly pottery, and absolute chronologies derived from historical evidence as well as scientific dating techniques such as carbon-14 and dendrochronology.[78] Relative chronologies result in the demarcation of cultural phases. The sequence of relative chronologies is correct but the association of relative to absolute chronologies has become controversial. The mutual dependence between various European cultures is elementary for chronological studies in archaeology. Imports from regions with a 'high culture' such as Egypt, Mycene or the Near-East create a traditional chronological framework for prehistoric European societies. For prehistory, the correlation is basically constructed from the Egyptian astronomical chronology and its dating. In recent years a discrepancy has emerged between the absolute dating of the Egyptian historical chronology and the results from the scientific dating techniques. The Egyptian chronology is passionately debated in relation with the Thera eruption that has a historical date and discrepant scientific dates which derive from various archaeometric techniques.[79] The discussion is, however, not restricted to the Aegean middle Bronze Age but also concerns later periods. The absolute dates for European cultural phases during the late Bronze Age and early Iron Age are neither secure. On account of C-14 and dendrochronological dates from central Europe, Randsborg wrote that '*it might be necessary to change the absolute dating of the Greek ceramic chronology for the first half of the last millenium BC*'.[80] In particular the Geometric period presents opportunities for readjustments.[81] In 1994, Peroni published chronological charts which relate the historical Italian chronology to dendrochronological dates from central Europe.[82] These charts suggest several periods of inconsistency but are based on scientific datings from central Europe but not from central Italy. Therefore they require substantiation with high quality radiocarbon or dendrochronological datings from Italy itself. Such datings are scarce. Calibrated radiocarbon datings which support a high chronology for the Iron Age in central Italy are presently available for *Satricum* and Fidene.[83] At *Satricum* a difference of at least 50 to

---

according to Livy, Veii was destroyed by the Romans: *cf.* Prayon 1981; Cornell 1995, 1-30, 119-27.

[78] *cf.* Parkes 1986, 1-127. I refer to Parkes for an introduction of the various scientific dating techniques. Handbooks on dendrochronological and radiocarbon dating were published by the European Science Foundation: Eckstein 1984; Mook and Waterbolk 1985. As far as I know, there are unfortunately no dendrochronological dates for central Italy during the period 800 to 400 BC: Fasani and Martinelli 1994, 39.

[79] *cf.* Hardy and Renfrew 1990.

[80] Randsborg 1991, 93.

[81] A high chronology for south Italian early Geometric pottery is suggested by radiocarbon dates published by Whitehouse and by Herring: Whitehouse 1994, 93-4; Herring 1993.

[82] Peroni 1994, 199-216; Figs. 79, 80. Fig. 80 is included in Fig. 1 of this section.

[83] Skeates published a list of nearly 1000 radiocarbon datings for prehistoric Italy: Skeates 1994. These datings are, however, not interpreted and this makes comparison arduous. The datings referring to the early Iron Age are scarce because there are complications with the callibration curve. Within this curve there is a plateau around 750 to 400 BC which makes Carbon-14 unsuitable for dating archaeological contexts from this

100 years between the traditional datings and the carbon-14 datings has emerged for some settlement features of the 8th century BC.[84] In order to test this discrepancy, Bietti Sestieri was so kind as to provide me with some carbon samples from the Iron Age building at Fidene.[85] The building is traditionally dated by pottery to around the middle of the 8th century BC. It was destroyed by fire and carbon samples, probably from structural wooden elements of the building, were dated with the conventional radiocarbon technique. The results of these four datings imply a high chronology in line with the dendrochronological dates from central Europe. However the datings might derive from beams of long life span which themselves cause a time difference of several decades to more than 100 years. This is known as the *old wood effect* and complicates the interpretation of radiocarbon datings because the organic age of a tree can give a radiocarbon age which is significantly older than the cutting date.[86] To confirm the conventional carbon-14 datings from Fidene, two samples which derived from carbonised seeds in the building, were dated with the Accelerated Mass Spectrometer (AMS) of the Centre for Isotope Research at the University of Groningen. Seeds, twigs, leather, bone and outermost tree-rings are not influenced by the *old wood effect* and, therefore, eliminate a time difference caused by wood of long life-span. Regardless of the *old wood effect*, the radiocarbon datings of the seeds from Fidene correspond with the other carbon-14 datings of the same hut. As a result there are six, closely related radiocarbon datings from one, well preserved feature at Fidene. The datings range from 2820 to 2760 ± 50 BP which corresponds with a calibrated date between 1115 to 808 BC.[87] The radiocarbon datings are consistently at least 50 years older than the traditional datings based on pottery sequences and historical datings. This implies a higher chronology for the early Iron Age which coincides with the revised chronology of central Europe and the chronological charts of Peroni. It appears that the Iron Age in central Italy may start earlier than previously thought. However only two sites in central Italy with evidence for a higher dating of the Iron Age, that is *Satricum* and Fidene, cannot construct a revised chronology for central Italy.[88] The far reaching consequences of a new, absolute chronology for central Italy cannot be evaluated in this study. It probably does not alter the sequence of relative chronologies and might eventually result in a revision of the dating of the substages of the Greek Geometric period. If the Greek Geometric period cannot be adjusted to a higher chronology than this would affect the reconstruction of the historical Greek colonisation process. In addition it might indicate that the social-economic transitions in central Italy during the 8th century BC were less abrupt because in absolute years the Iron Age in central Italy until 725 BC extends by about 100 to 150 years. Inspite of the evidence presented for a high chronology during the 9th and 8th centuries BC, this study will employ the traditional absolute datings. The absolute datings from the late 8th century BC onwards are considered to be relatively secure though prior to about 700 BC,

---

period. The datings from *Satricum* and Fidene are not included in the list by Skeates.

[84] Olde Dubbelink and van der Plicht, 1989; 1990.

[85] Bietti Sestieri *et alii* 1992; 1995.

[86] Waterbolk 1971. The age of the timber was given as an explanation for the time difference that was recorded between the traditional historical and radiocarbon datings at Luni sul Mignone. There is however, one radiocarbon dating from Luni sul Mignone, Tre Erici (St. 1340, 2 σ 1368-832 cal BC) which supports a high chronology for the Iron Age because the carbon sample derived from a hearth which is a context that is less susceptible to the *old wood effect*: Östenberg 1967, 58, 62-64, tabella 1; Skeates 1994, 246.

[87] The callibrations give a confidence level of 95.4% (2 σ confidence level). There is a 95.4% change that the actual date of the sample lies within the date range. The AMS radiocarbon datings of the seeds (GrA-5007 and GrA-5008) give a range between 1032 to 816 BC (2 σ confidence level) while the four conventional radiocarbon datings (GrN-20125 to GrN-20128) range between 1115 to 808 BC (2 σ confidence level).

[88] It is suggested by Carafa that the dendrochronological dating of the *Tomb of Midas* at Gordion might raise the dating of tomb 871 at Veii, the Bernardini and Barberini tombs at Palestrina and the Regolini-Galassi tomb at *Caere*, by about 50 years. These tombs might not be dated to the middle of the 7th century BC but to the late 8th, early 7th centuries BC: Carafa 1995, 265. Randsborg, however, considers that the absolute chronology from the late 8th century BC needs no readjustment: Randsborg 1991, 101.

the cultural reconstruction of central Italy might change in the near future.[89]

1.4 *Method of study*

In this section, the method of study for investigating the material record for industry and technology is presented. In the introduction of this chapter a distinction was made between direct and indirect, primary, secondary and tertiary evidence. The direct evidence incorporates industrial structures, waste products, manufactured goods, scientific examinations and the geological perspective. The indirect evidence concerns analogies, experimental archaeology and ancient literary texts. Principally, the method of study involves an examination of the primary, archaeological evidence for manufacture and of the secondary information which are the artefacts themselves. For the interpretation of this direct evidence, the information can be submitted to a number of additional approaches which comprise ethnography, archaeometry, experimental archaeology, geological perspective and ancient literary texts.

Ethnography for comparative information

For a social-economic reconstruction it may be possible to employ, by analogy, ethnographic records for substituting missing correlations of the archaeological evidence. Analogy with respect to technological methods is mainly focussed on ethnography and experimental archaeology. Ethnographic studies have traditionally been important for ceramics.[90] By cross-cultural analysis these studies resulted in the construction of models for the development of the pottery craft by various scholars such as van der Leeuw, Peacock and Arnold.[91] Peacocks' model is employed in chapter II to describe the development of the pottery production in central Italy. Ethnographic analogies are less developed for a reconstruction of the metal craft.[92]

Archaeometry

Archaeometry represents the field of scientific techniques for establishing the manufacturing processes as well as the identity and, possibly, the provenance of the raw materials.[93] The basic scientific techniques which I applied, are predominantly thin-sectioning of ceramics and metallographic examination of metals. Thin-sectioning of ceramics is essential for the characterisation of fabrics with coarse inclusions. Moreover, the mineral inclusions can be related to geological regions in order to determine their provenance.[94] Metallographic examinination can clarify the manufacturing process as well as the material characterististics of copper alloys and other metals.[95] Occasionally, other scientific techniques are reported such as X-ray Fluorescence (XRF) or Scanning Electron Microscope-Energy Dispersive X-ray (SEM-EDAX) analysis. The results obtained with these techniques will be examined and related to

[89] The absolute chronology of the early Iron Age in Italy is a research topic of the Department of Archaeology of the University of Groningen in collaboartion with dr. A.M. Bietti Sestieri and dr. ir. H. van der Plicht. Momentarily Bietti Sestieri, van der Plicht and the author are preparing a detailed paper on the datings from Fidene. Moreover, it is designed to date bones from the early Iron Age necropolis of Castiglione in *Latium Vetus*. In addition, C-14 dates from Bronze and Early Iron Age settlement features at Francavilla Marittima which are excavated under the direction of Prof. Dr. M. Kleibrink, are presently interpreted and prepared for publication.

[90] Shepard 1956.

[91] van der Leeuw 1976; Peacock 1982; Arnold 1989.

[92] *cf* Mc.Naughton 1993.

[93] *cf*. Parkes 1986. For an account of the historiography of material studies see for example, Tite and Riederer: Tite 1991; Riederer 1987, 13-4.

[94] *cf*. Jones 1984; Jones 1986, 54-6.

[95] *cf*. Scott 1991.

their archaeological significance. For an explanation of various archaeometric methods, I refer to Parkes.[96]

Experimental archaeology

Experimental archaeology provides detailed information on the artefacts, the skills of the artisan involved, the investment of time, the division of tasks and the manufacturing process. Like the information obtained by ethnography, experimental archaeology can be correlated to ancient technology by analogy because the data are only indirectly related to prehistoric societies. Experimental archaeology involves the reconstruction of tools and processing techniques according to presently recorded conditions in antiquity.[97] Experiments may also involve the examination of variables resulting in particular properties of materials such as the heating effectiveness or the thermal shock resistence of ceramics.[98]

Geological perspective

The geological perspective provides an inventory of the resources.[99] Ethnographic studies have established that the raw materials for the ceramic industry are predominantly located near the pottery producing community.[100] Therefore it is crucial for provenance studies of ceramics to examine the geological resources nearby before investigating resources further away. This restriction is less valid for the exploitation of metal-ores. Copper ores are relatively rare but iron ores are widespread. The geological distribution of metal-ores in central Italy has been focussed on Etruria.[101] The distribution of ores is, however, not restricted to Etruria though this region is extremely rich in mineral resources. Iron ores are, for example, also reported in *Latium Vetus.*[102] Whether these iron ores might have been exploited in antiquity will be examined in chapter III;

Ancient literary texts

The ancient literary texts give an account of the role of artisans in social and economic life. The ancient Roman texts refer minimally to craftsmen and economic aspects. They seem scarcely relevant for the period discussed because they were written centuries later.[103] Nevertheless, some texts are based on accounts which originated in previous centuries. These fragments are incorporated in this research because a proto-historic period is examined which implies the rudiments of textual-historic evidence and signals an allusion to historic order.[104] Important in this

---

[96] *cf.* Parkes 1986.

[97] *cf.* Coles 1979; Fansa 1990.

[98] *cf.* Schiffer and Skibo 1987, 601-9.

[99] *cf.* Jones 1986, 5-12, 103-5; Zifferero 1991.

[100] The clay and temper resources are located within the neighbourhood, preferably at the distance of 1km or less. Of the pottery producing communities that were examined by ethnographic studies, 33% obtained their clay at the distance of 1 km or less. For the temper this percentage rose to 52%. The clay came from a distance within 7 km for 84% of the communities while 97% of the sample obtained their temper within 6 to 9 km: Arnold 1989, 32-57.

[101] Rasenna 1986, 120-4; Bietti Sestieri 1992 b, 22-5.

[102] See section 3.5.

[103] Consequently, I disagree fundamentally with Cornell who states that: '*The most important evidence for the early history of Rome comes from literary sources - that is books written during the classical period and published in manuscript form*'; Cornell 1995, 1. This may be partly true for the 4th and 3rd centuries BC but, in my opinion, these texts do not constitute the most important evidence for the period 800 to 400 BC. It was necessary to classify ancient literary sources as tertiary evidence for this research on the intensification of the organisation of production. See section 1.1.

[104] *cf.* Hawkes 1954, 159-60.

context are the Twelve Tables which were conceived around 450 BC. These laws have been preserved incompletely in the works of later authors but still contain important information on social-economic distinctions during the 5th century BC.[105]

These five additional approaches augment the archaeological information. They reduce some of the limitations related to the material evidence. The interpretation of this evidence is the main purpose for including these approaches in the methods of study. Therefore this research incorporates information which originated from diverse disciplines such as archaeology, ethnography, scientific analyses, experimental archaeology, geology and ancient literary texts. A combination of these disciplines creates opportunities with which it becomes feasible to reconstruct the social-economic development of proto-historic central Italy.

The introductions to theory, chronology and method of study, require an additional presentation of slightly less abstract concepts such as agricultural foundations, urbanisation, craft specialisation, trade and cultural development. These concepts are subject to reflection and a discussion is essential for an outline of the technological and economic transitions. As mentioned in section 1.2, the economic development of central Italy could not have been that comprehensive when not supported by other transitions.

1.5 *Agricultural foundations*

Throughout antiquity the economy depended predominantly upon agriculture. From the 8th to the 5th centuries BC, society in central Italy developed from practically self-sustaining peasant communities with scarcely any craft-specialisation except for metalworking, to early towns with separate crafts and a segregation into classes. Nevertheless, by the end of the 5th century BC these towns were still largely dependent on the products of a rural hinterland. Social distinction into classes was sustained by a differential access to resources. The inequality in agricultural landholding probably accelerated the transition to a stratified, urban society for stratification is characterised as unequal control over subsistence resources.[106]

The distinction between primary and secondary agricultural products is one of increasing specialisation. Primary products can be directly obtained from plants and animals such as grapes, olives, meat, horn and skins. Secondary products are the result of more elaborate processing techniques. Examples are wine, olive oil, cheese, linen and leather.

Leatherworking was mentioned by Plutarch as one of the earliest crafts established at Rome.[107] This could imply a specialisation in cattle-raising for *Latium Vetus*. Cattle dealing may have been one of the original functions of the *Forum Boarium* which is considered to be the oldest of Romes' markets.[108] Animal husbandry was important

[105] Cornell discusses the Twelve Tables extensively: Cornell 1995, 242-92. A distinction has to be made between the Greek literary sources and the Roman texts. The economic and technological development in Greece during the period 800 to 400 BC is to a certain extend discussed in the ancient literary sources: *cf*. fragments in Homer, Hesiod *etc*. These texts were the point of departure for scholars such as Finley, Starr and Bakhuizen: Finley 1981; 1985; Starr 1977; Bakhuizen 1976. Similar sources are almost non-existent for central Italy. Consequently, the archaeological data are essential for a reconstruction of the economic transitions in central Italy during this period. As mentioned in the introduction, the social-economic conditions that were described by the Greek and Roman authors can not be transferred to conditions in central Italy during the 8th till 5th centuries BC. They may hint to specific circumstances during these centuries but require a reading within an archaeological context.

[106] Wason 1994, 53.

[107] Plutarch Numa, 17.

[108] Coarelli 1988 a, 127-36; Smith 1996, 179; Cornell 1995, 48.

for the economy of the region around Rome and is attested from the late Bronze Age in southern Etruria.[109] The faunal remains of *Latium Vetus* from contexts which are dated to the 8th and 7th centuries BC show a high incidence of cattle, followed by pigs and sheep.[110] Low percentages of wild species indicate a developed subsistence level. This can, however, vary from site to site. In Etruria, for instance, it has been suggested that the inhabitants of the rural settlement of *Macchia del Monte* near *Lago dell'Accesa* which is dated to the 6th century BC, supplemented their meals with game and fish.[111]

The sacrifice of domesticated animals is of early date and may be correlated to the protection of animal husbandry.[112] The simultaneous offering of a sheep, a cow and a pig is attested at *Satricum* from at least the early 5th century BC. The archaeo-zoological remains at the site record the sacrifice of a *suovetarilia* in votive deposit II.[113] A different kind of offering is recorded at necropoleis. The offering of meat in graves is reported on the Roman Forum and at Osteria dell'Osa and dates from the early Iron Age.[114]

The cultivation of plants is reflected by sporadic finds of cereals such as barley, spelt, emmer and bread wheat. They are encountered in combination with faunal remains which indicates a combination of agriculture and animal husbandry from an early period.[115] The typical Mediterranean polyculture (the cultivation of olives, vines as well as cereals) became established in central Italy during the late 8th and 7th centuries BC though an earlier introduction cannot be excluded.[116] The establishment of polyculture signals an expansion in agricultural production because it supplemented the traditional agronomics. This resulted in an increased diversity of food products which probably advanced stability, agricultural specialisation and exchange.[117] Moreover, the cultivation of olives and vines necessitates substantial resources. Vineyards demand intensive care while an investment in time is required before the vines and olive trees produce crops. Polyculture reveals long-term scenarios and probably private landholdings.[118] It contributed significantly to the social-economic transformations recorded for the region.

The manufacture of Etruscan transport *amphorae* from the second half of the 7th century BC onwards signifies the production of agricultural surplus as well as some kind of adminstration.[119] The early 6th century BC merchant vessel discovered in the Campese Bay near *Isola del Giglio*, demonstrates that these *amphorae* could contain resin and olives as well as wine. The cargo of the wreck included, besides other merchandise, about 130 Etruscan transport *amphorae*. Some of these *amphorae* transported pitch while numerous olive pips testify that others

[109] Bietti Sestieri 1992 b, 35.

[110] De Grossi Mazzorin 1989. For *Satricum* see: Bouma *et alii* 1995, 187.

[111] van Dommelen forthcoming; Camporeale 1985, 135; section 3.6.6. For *Satricum* see: Bouma *et alii* 1995, 187.

[112] Smith 1996, 116.

[113] Bouma 1996, 278-81; 441-4.

[114] Bietti Sestieri 1992 b, 61, 155.

[115] Bietti Sestieri 1992 b, 34-5, 61-2.

[116] Anzidei *et alii* 1985, 190; Barker, 1981, 217-9. Some scholars suggest that vines and olives might have been cultivated in central Italy from an earlier period: *cf.* Bartoloni 1989, 51, 188-9.

[117] See for example, Renfrew and Greene for the effects of the introduction of polyculture: Renfrew 1972, 304-5, 481; Greene 1990, 72-3, 87.

[118] I discuss the slow rythms of appropriation of resources in combination with early state formation, in section 1.8. Private landholdings might have developed during this period though a system of nominal ownership with tributary rights probably existed as well.

[119] Rizzo 1990. Docter records the existence of transport *amphorae* made in central Italy from the 8th century BC onwards. He also mentions a limited production of transport *amphorae* which might derive from *Latium Vetus*: Docter 1997, 192-215.

contained olives. The wreck is dated to 590-580 BC and reflects the commercial exploitation of pines and olive groves in Etruria from an early period.[120]

The attested surplus production and its export indicates both an increase in and a regulation of, the agricultural yield. This can be related to an expansion of the exploitation of the agricultural hinterland during the 7th and 6th centuries BC which was recorded by various surveys. The population was by the 9th and 8th centuries BC large enough for the establishment of early nucleated settlements while being simultaneously small enough to live from the land that immediately surrounded these centres. With a further increase in population, more fields and also more distant fields had to be exploited. The distances may have become unprofitably large and thus farmers had to settle the countryside.[121] This account of the development appears unilinear because the increase in population is presented as a prime mover. It is suggested that the increase of population leads to intensification of agriculture, and to the need of greater efficiencies and economies of scale.[122] However a unilinear account is not suitable as an explanation for the considerable transformations that took place in central Italy. Furthermore, an increase in population is sustained by cultural developments. One of these developments is the economic bond of the emerging centres with its territory. In order to exemplify this bond, some illustrations from field surveys may suffice. At Crustumerium, for instance, the scatter of sherds is sufficiently dense in the 9th century BC to specify the outline of the emerging settlement. The occupation of the country becomes apparent in the 7th and early 6th century BC.[123] A survey around Fidene by Quilici and Quilici Gigli presents a comparable development (Fig. 2).[124] Figure 2 illustrates an increase in the exploitation of the countryside around Fidene from the early Iron Age. Similar patterns were established elsewhere, in South Etruria and the Pontine region.[125] For example, an increasing bond between settlements and hinterland was demonstrated for the Pontine region during the 7th and 6th centuries BC. Nevertheless, the quality of the agricultural soils must have influenced the settlement patterns considerably. The good soils became settled first and were more densely populated. This selection caused differential, agricultural exploitation.[126] Judging from the surveys, it appears that the countryside of the southern part of *Latium Vetus* is less densely populated than Etruria or the area around Rome. The poorer natural resources of this region must have curtailed its social-economic development.[127]

[120] Bound 1991, 203-11; Cristofani 1995, 131.

[121] I refer to Chisholm for an account on the concept of distance in relation to various kinds of settlement patterns; Chisholm 1979.

[122] Renfrew and Bahn 1991, 419. The framework which is presented in this chapter, records enough information in order to state that a unilinear account will not be sufficient.

[123] Quilici and Quilici Gigli 1980, 273-94; Ross Holloway 1994, 124-7.

[124] Quilici and Quilici Gigli 1986, 365-98.

[125] Potter 1976, 23-7, 303-4; Attema 1993, 218-26.

[126] See for an illustration of this aspect the survey by Enei in the territory of *Caere*: Enei 1993.

[127] Bietti Sestieri 1992 b, 25-7. The pedologist Arnoldus-Huyzendveld considers the soils in *Lazio* to be in general as potential as those in Etruria: personal communication.

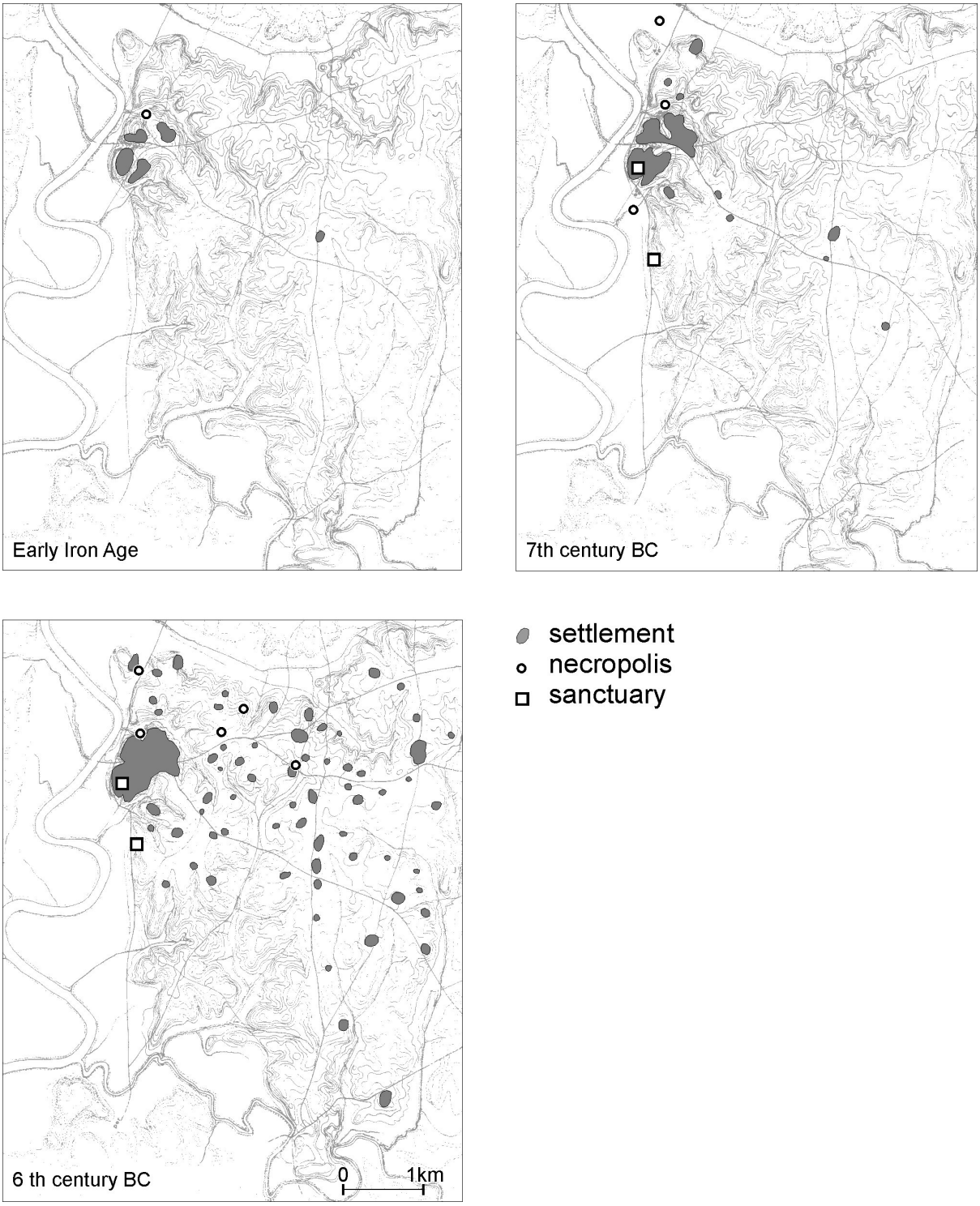


Fig. 2. Settlement patterns in and around Fidene from the early Iron Age to the 6th century BC.

1.6 *Urbanisation*

The development of urban centres is predominantly the result of morphogenesis in a more or less self-organising system with increasing size of the population. Thus, it is observed that in central Italy the development of advanced labour division and urbanisation coincide. In order to assess the role and position of craftsmen within this evolution, I consider it essential to look into the urbanisation process. This process is essentially a centralisation process in which the urban centre becomes in many aspects the focal point for its surrounding territory.[128] In Etruria the centralisation or concentration can be observed as an intentional clustering of villages during the early Iron Age. This nucleation must be read as a planned act of some of the communities inhabiting the emerging Etruscan polities.[129] The plateaux on which the future towns were established, were originally inhabited by separate, interdependent settlement units, probably each with distinct cemeteries. With continuing progress these nucleated settlements could form urban centres. Centres with urban characteristics appeared in Etruria during the late 8th and 7th centuries BC as proto-urban settlements.[130] This phase is marked by early buildings with stone foundations and the appearance of communal structures such as sanctuaries. Occupation was thinner in *Latium Vetus* and settlement nucleation did not occur on one large plateau but appears to have been more dispersed. The urbanisation process developed later when compared to Etruria.[131] Moreover, the Latin towns seem to be less well-defined which may be due to lower population levels and density as well as to the scattered nature of the urban territory.[132] Contrary to this is the quality of the archaeological record. At present settlement excavations have proceeded on a more extensive scale in *Latium Vetus* than in Etruria.[133] This may lead to a distortion while discussing the primary evidence for the workshop mode of production in both regions. As a result, it has been difficult to demonstrate the process of workshop nucleation for a major Etruscan town. Nevertheless, it was essential to include one of these towns in the presentation of the archaeological evidence in the chapters II and III. Otherwise an evaluation of the process of craft specialisation in central Italy would have been incomplete.[134]

The process of urbanisation is represented by a number of features. Wheatley considers that the emergence of urban centres depends on the following aspects:[135]
a. economic bond with the hinterland;
b. the emergence of a market economy;
c. political, religious and social relation with the hinterland;
d. the urban way of life;
e. the spatial development of the urban centre.
Combining these aspects Starr defined the town as a political, religious and economic centre for its surrounding

[128] *cf.* Rowlands 1987, 4-5; Snodgrass 1986, 47-8; Morris 1992.

[129] Bietti Sestieri forthcoming.

[130] *cf.* Bonghi Jovino and Treré 1987, 59-91.

[131] I refer to Bartoloni and Bietti Sestieri for a description of this process: Bartoloni 1989; Bietti Sestieri 1992 b.

[132] *cf.* Kleibrink 1997.

[133] *cf. Grande Roma* 1990; Ross Holloway 1996.

[134] I choose for this study *Caere* to represent a major Etruscan town since this site has relatively much primary evidence on local production when compared to other major towns like Tarquinia, Vulci and Vetulonia. Still I had to resort to secondary data for *Caere* in order to supplement the deficient primary evidence. See section 2.6.4 and 3.6.3.

[135] Wheatley 1972. The individual aspects are presented by: Morris 1992.

region.[136] These aspects can be studied separately but it has to be stressed that they are strongly interrelated and mutually reinforcing which is indicated by the morphogenetic character of the urbanisation process.

As mentioned above, the increase in craft specialisation is inherent to the development of urban centres. This aspect needs to be added to the criteria mentioned by Wheatley since it establishes both the economic bond with the hinterland as well as the emergence of a market economy. Moreover, the increase in craft specialisation can be identified with archaeological means for it has a material connotation.

Economic specialisation is division of labour between households which eventually makes the craftsman and his family dependant on the production of food by other families. In the period discussed this is a very gradual process since there are quite a few sites where part-time specialisation can be identified. Furthermore, the rate of specialisation can be assessed by the investmenst in technological instruments and infrastructure. The factors favouring the development of crafts are listed by Renfrew while discussing the emergence of the Aegean Bronze Age cultures.[137] Most of these factors are also relevant for central Italy between 800 and 400 BC and are recorded here because at various stages in this study one of these elements will be examined. Renfrew mentions that craft specialisation is enhanced by:

- increased agricultural production;
- concentration of resources by redistribution;
- increased population passing the population treshold for craft specialisation;
- new materials and artefacts;
- trade;
- religious representation and the decoration of living spaces.

Another aspect which will advance craft specialisation is competition. Production will increase when artefacts are recognised as forms of visible wealth which in turn provokes competition and conflict. This feature is essential for the developments in central Italy.

These general factors are supplemented by an examination of the characteristics of the process of craft specialisation. This process is described by Brumfiel and Earle as a complex concept that involves a number of variations. These are:[138]

a. the relationship of the specialist (independant or attached);
b. the nature of the product (subsistence goods, wealth items or services);
c. the intensity of specialisation (part-time or full-time);
d. the scale of the production unit (individual industry, household industry, workshop industry, village industry or large scale industry);
e. the volume of output per individual specialist.

Other variations can be added which relate more directly to the archaeological discipline:[139]
f. the investment in technology which can, for instance, be deduced from the construction of a kiln or the provisions needed for the preparation of clay;
g. the variation in form, decoration and function of the artefact. The production of larger quantities can increase standardisation of specific products but can also lead to an increase in decoration and the manufacture of products

[136] Starr 1977, 98.

[137] Renfrew 1972, 492.

[138] Brumfiel and Earle 1987, 5.

[139] *cf*. Peacock 1982.

with specific functions. In central Italy, the production of larger quantities predominantly lead to an increase in standardisation[140] while in Athens for example, the production of large quantities of fine wares is distinguished by an increase in decoration which is exemplified in the production of the Black- and Red-Figure vases.

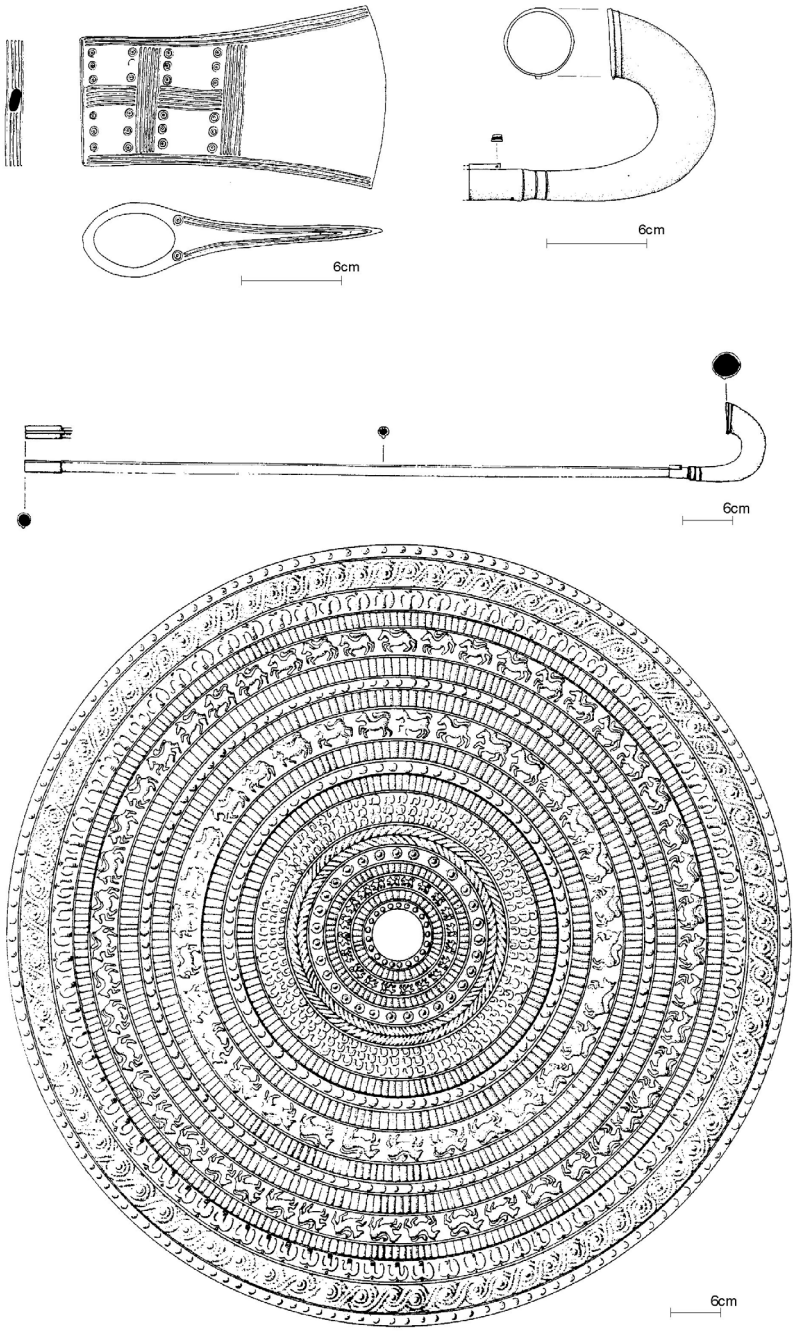


Fig. 3 Copper alloy axe, lituus and shield which were deposited at Tarquinia.

[140] The standardisation of the pottery production in central Italy is discussed in chapter II. The introduction of measures is presented in chapter IV.

These dimensions will be examined in detail in the following chapters. The relationship between the different variations is that increase in craft-specialisation is expressed by an increase in manufacturing time and subsequently by the expansion of number of artisans working in the workshop. This is related to a growth in transactions and leads to an intensification of investments in technological infrastructure.[141] The character and number of transactions directs the relationship between market and craft-specialisation. This relation is fundamental for the economic transition examined in this book which makes it necessary to evaluate the market conditions in proto-historic central Italy. These markets are hard to recognise as an architectural manifestation, that is as an *agora* or *forum*. I consider the market conditions in central Italy rudimentary which is partly based on the lack of coinage of small denominations or small change. These coins indicate that one could obtain everyday commodities on a market. However small change was not available in central Italy before the 3rd century BC.

A distinct indication for the emergence of market conditions is the nucleation of workshops.[142] This nucleation can develop in urban or in rural contexts but the transfer of the products of these workshops depends on sufficient demand and, therefore, urban markets. Settlement excavations can reveal nucleation of workshops and this in itself would record urban conditions and some sort of market regulation. In theory the process of urbanisation could be identified by nucleation of workshops. It is one of the features which will be examined in the sections of chapter II and III where the individual sites are presented.

The concept of specialisation in services will not be discussed in detail though the simultaneous development of *collegia* of both industries and services is validated. The upsurge and legitimation of religious institutions in central Italy during the 7th and 6th centuries BC implies the existence of *collegia sacrificia*.[143]

Another group which provided services were performers. The list of early crafts mentioned by Plutarch includes musicians. New musical instruments became available in the region during the 7th century BC. Some of these instruments have been actually excavated. An outstanding copper alloy *lituus*, a sort of trumpet, was deposited at Tarquinia together with an axe and shield of the same material (Fig. 3). The artefacts are exquisitely made and are dated to the early 7th century BC. Besides implying the existence of musicians, the objects signify the artistry of the Etruscan coppersmiths. The *lituus* is about 145 cm long and weighs 610 g. Some components of the instrument are cast while others are hammered. Its manufacture is intricate in order to manipulate the sound which would have been suitable to accompany chanting.[144] Early wooden pipes were recovered from the wreck at Campese Bay, *Isola di Giglio* and are dated to 590-580 BC.[145]

Musicians with instruments such as flutes, horns, trumpets and zithers are depicted on architectural terracottas, mural paintings in tombs, funerary urns and vases.[146] Judging from the ancient illustrations, musical instruments were employed to attend symposia, processions, combats and dances. The terracotta frieze plaques from Poggio Civitate which are dated to 600-590 BC, and the 6th century BC plaques from *Velitrae*, Rome and Palestrina

---

[141] Bitter 1991, 89.

[142] Peacock 1982. Peacock considers that a workshop is an enterprise with more than one full-time craftsman. A manufacture employs more than 12 labourers.

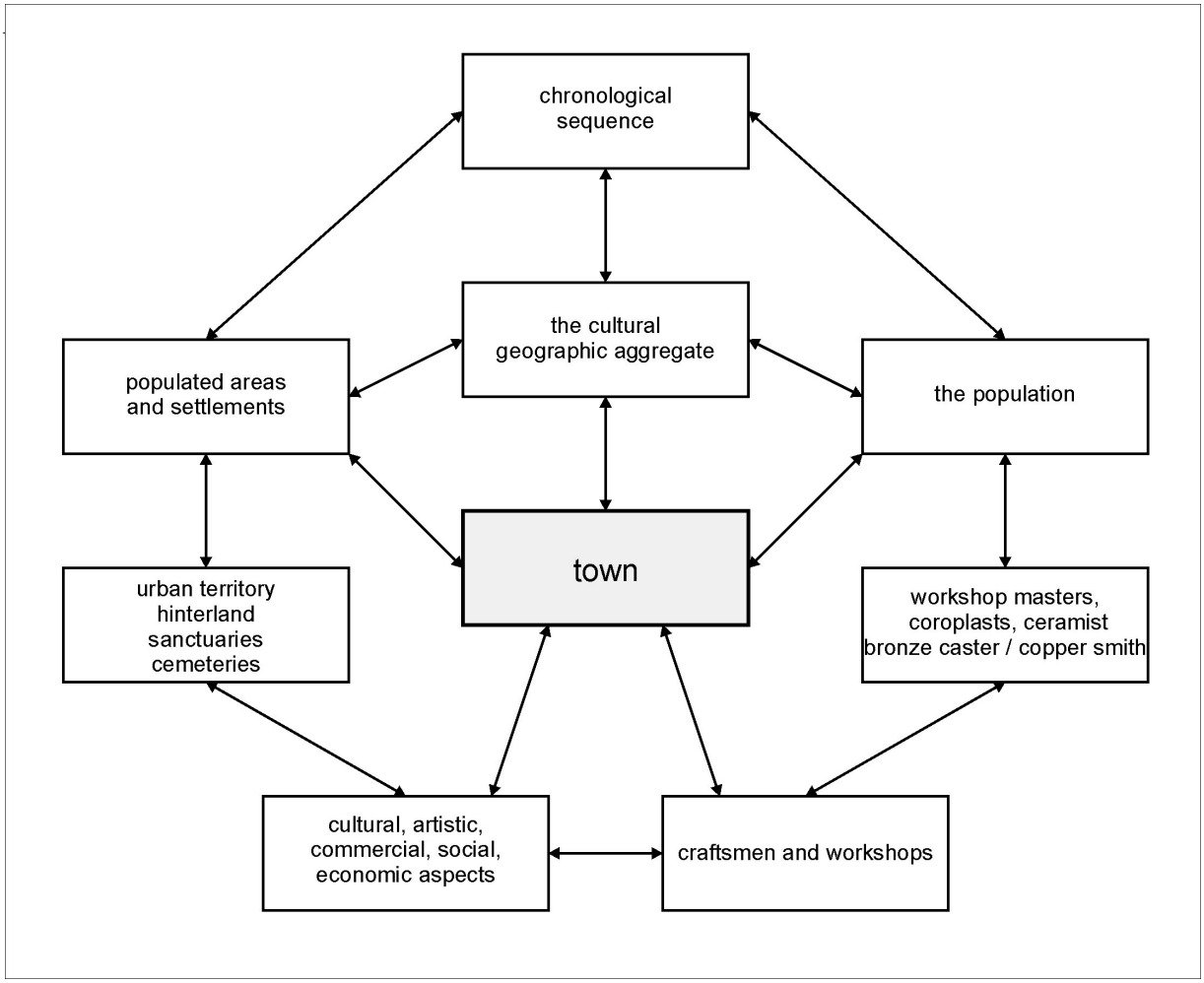
[143] For a discussion of the *collegia* see section 2.7. *Collegia sacrificia* are for example, examined by Cornell: Cornell 1995, 233-6, 251-2.

[144] Bonghi Jovino and Treré 1987, 63, 72-7. Other *litui* are dated to a later period. One specimen is exhibited in the *Museo Gregoriano Etrusco* and was recovered at Vulci. Another *lituus* was offered to Sotheby's: Blanck and Proietti 1986, 24-5, 42. In their publication Blanck and Proietti also examine depictions of musical instruments in central Italy.

[145] Bound 1991, 232-4.

[146] *cf.* Weber-Lehmann 1985. Weber-Lehmann examines some symposium scenes which are illustrated on late Archaic mural paintings in tombs at Tarquinia. It is noteworthy that the musicians are rendered differently in dress and composure when compared to the portrays of servants.

illustrate some of the occasions which were attended by musicians.[147] The nature and the number of occasions implies that in the major centres of central Italy, companies of musicians might have existed from the 7th century BC, providing their services whenever required.



The process of craft specialisation has to be reconstructed as a measured process varying with the size of the settlement and the demand. In the beginning, craftsmen may have worked with various materials and could have combined crafts with agricultural labour. In addition they may have provided services and some of them could even have travelled depending on the market and the required, technological infrastructure. For the Orientalising Period, it is generally accepted that a division between copper- and iron-smiths had not yet occurred.[148] Correspondingly, a division into gold- and silver-smiths is not probable. Concerning the ceramic craft, the evolution towards specalisation must have been gradual with a continuation of domestic production well into the 6th century BC side by side with the manufacture by potters of more standardised and technologically advanced pottery. The major towns in central Italy will have matured at an early stage into the model presented in Figure 4. This model presents a

[147] For Poggio Civitate, see for example: Rathje 1988, 86-8 and *Case e Palazzi d'Etruria* 1985, 122-7. For the terracotta plaques at *Velitrae*, Palestrina and Rome, I refer to: *Grande Roma* 1990, 93-4, 166-8, 204.

[148] Pleiner 1988, 35-6; Hartmann 1984, 154-5 and Ampolo 1980, 173-9. Both materials were worked in the same workshop. An internal division of labour in metal workshops might soon have developed depending on the demand.

correlation between town and hinterland in which the workshop masters, the craftsmen and the individual workshops are related to other features of town and hinterland.[149] Smaller centres will never have reached this rather advanced stage of craft specialisation which is characterised by individual workshops, each with a master and his assistants.

1.7 *Economic development*

An economy consists of producers, distributors and consumers or to speak in terms more familiar to the period in question craftsmen, traders and customers. Their actions and interactions create an economy. Some aspects of the economic development in central Italy such as the agricultural foundations, were introduced above. The producers, that is crafts and industries were presented in the introduction and in the section on urbanisation. They will be examined comprehensively in the chapters II and III. This section is devoted to some other features of an economy. It will start with a discussion on the size of the population for this directs the demand. Subsequently, the resources, means of transport, local production, trade and exchange mechanisms are introduced.

The correlation between supply and demand is essentially regulated by the size of the population. An increase in the number of people modifies the relationship between supply and demand. As long as demand favours production and *vice versa* it will sustain increasing social-economic complexity.[150] Whenever, this mechanism falters it may cause severe friction between the different social units. Increasing population densities associated with decreasing mobility and growth of complexity of subsistence, will result in more centralised coordination.[151] Population growth is controlled by factors such as improvement of living conditions thus lengthening peoples lives, rise in the number of childbirths and immigration. For central Italy during the period 800 to 400 BC, it is reasonable to assume that in general, the growth rate of the population in Etruria was higher than in *Latium Vetus*. This is reflected by the increasing number and size of the settlements.[152]

A calculation of the actual size of the population has been feasible for a limited number of sites. The number of residents in various centres in *Latium Vetus* was listed in the *Dialoghi* and is chiefly based on the size of the settlements.[153] These numbers cannot be regarded as indicative because the density of houses at the individual centres is not established. It seems unlikely that during the 7th to 5th centuries BC, the defended settlement centres in *Latium Vetus* became densely populated over the whole settlement area considering the dispersed nature of the individual nuclei recorded at some of these settlements.[154] More representative are the numbers given for those sites were the necropoleis were excavated.

Bietti Sestieri considers that at Osteria dell'Osa during the period 900 to 770 BC, the size of the community did not exceed a figure of between 100 and 300 people.[155] The settlement during this period reflects a ranked society

[149] This model incorporates many of the features that were mentioned by: Wheatley 1972 and Morris 1992. An aspect which sofar has been hardly examined, is the distribution of products of urban workshops over the urban territory. This hampers somewhat a full reconstruction of the economic transitions in central Italy.

[150] Renfrew 1972, 494.

[151] This aspect was one of the principles in a work by Fried who examined the evolution of political society from egalitarian, to rank and stratified societies, to eventually the state organisation: Fried 1967.

[152] see section 1.5.

[153] *Formazione* 1980, 24-30.

[154] *cf.* Kleibrink 1997.

[155] Bietti Sestieri 1992 b, 102.

with increasing competition among extended families which were organised in kingroups. The settlement was nucleated and a concentration of power developed around the male family heads.[156]

On account of the number of necropoleis and the density of the graves it is reasonable to assume that by 800 BC Veii inhabited more than 1,000 people.[157] With a population of this size, it is probable that proto-urban conditions emerged.

The civic character of *Caere* around 600 to 500 BC is expressed by a population of roughly 25,000.[158]

Based on the density of houses on the plateau of Acquarossa, it is estimated that during the first half of the 6th century BC between 4,000 to 7,000 people inhabited the site.[159]

A calculation of the number of inhabitants at Rome during a specific period is more complex because of the scattered archaeological evidence. Cornell considers that a figure of 35,000 inhabitants is feasible for the late 6th century BC but this figure seems to apply to the whole territory of Rome.[160]

The population size which derives from the necropoleis at *Satricum* dated to the 5th and early 4th centuries BC presents not an urban centre but dispersed nuclei. The south-west necropolis contained about 400 graves covering a period of approximately 100 years. The average age of the deceased has been determined as 21 years. The calculation results in a mean population of about 80 people.[161] Another necropolis of approximately the same period was located on the temple hill which implies that this hill was not or sparsely inhabited.[162] This necropolis may have been the burial ground of a specific group of inhabitants. In addition, it is recorded that there are at *Satricum* three different votive deposits dated to the 5th and 4th centuries BC. In combination with the nearby necropoleis this could indicate that the settlement was occupied by three extended families each with their own sanctuary and burial ground with a total population of a few hundreds of inhabitants for the whole settlement.[163]

The figures presented are conjectural but represent a seemly order of magnitude. They exemplify the variation in the nature and size of the settlements. This variation elucidates some of the differences encountered when examining the process of craft specialisation. In this context it is relevant to quote a famous passage by Xenophon:
'*In small towns the same workman makes chairs, doors, ploughs and tables, and often this same artisan builds houses, and even so he is thankful if he can find employment enough to support him. And it is, of course, impossible for a man of many trades to be proficient in all of them. In large cities, on the other hand, inasmuch as many people have demands to make upon each branch of industry, one trade alone, and very often even less than a whole trade, is enough to support a man: one man, for instance, makes shoes for men, and another for women; and there are places even where one man earns a living by only stitching shoes, another by cutting them out, another by sewing the uppers together, while there is another who performs none of these operations but only assembles the parts. It follows therefore as a matter of course, that he who devotes himself to a very highly specialised line of*

[156] Bietti Sestieri 1992 b, 209-11, 234-235.

[157] Bartoloni *et alii* 1994. See also: Berardinetti Insam 1990, 22-4.

[158] Huergon 1961, 176; Cristofani *et alii* 1988, 85. The actual calculation and the evidence for this figure is discussed in section 2.6.4.

[159] Wikander, Ö. 1993 a, 137-9; Person 1994, 293-4.

[160] Cornell 1995, 204-8. It seems that this figure is based on the whole *ager Romanus* of the late 6th century BC which is given as *c*. 822 km^2. His argument becomes vague when he compares the figure for *Caere* with that for Rome because both figures represent different areas. The figure for *Caere* is based on the necropoleis around the town and not on its territory which was approximately 1,500 km^2, thus roughly twice as large as the territory of Rome at that period.

[161] Gnade 1992; Knoop and Waarsenburg 1990, 39-40.

[162] Maaskant-Kleibrink 1992, 101-5.

[163] Kleibrink 1997; Nijboer *et alii* 1995.

work is bound to do it in the best possible manner'.[164]

After this account of the size of the population in various settlements in central Italy, I will discuss the exploitation of resources. The communities in this region exploited the resources nearby as far as their location was known and the processing techniques understood.[165] This is a main premiss for this study because production and consumption, are in my opinion, primarily directed by internal distribution and not by imports or exports through seaborne trade. A specification is required for the metals which are not commonly available. I will discuss metallurgy in detail in chapter III but at this stage it is necessary to outline that trade in metals had established a strong tradition of organised long-distance exchange in Italy from the Bronze Age onwards for which the exploitation of the ore deposits in Etruria were essential.[166] This tradition was still active and developing during the Iron Age. Thus, except for metals and other sought after goods such as amber and ivory, most of the resources must have derived from the hinterland of individual centres. The quantities of raw materials which travelled over long distances are considered small in proportion to the total production. The merchants' ships found in the Mediterranean and dated to this period, support this idea. They carry a range of products and transportation in bulk has been seldom attested for the early stages of seaborne trade.[167] There is some controversy about the early exploitation and subsequent shipping of iron ores from Elba.[168] Based on a nodule of Elban iron ore discovered at *Pithekoussai*, it was suggested that iron ores were transported over large distances during the early Orientalising Period. This view has been accepted by many scholars because it presents a convenient, direct correlation between the rich metal resources of Etruria and the commercial interest in this region by Levantines and Greeks.[169] There are, however, several arguments which dispute the idea of the early transfer of ores. The nodule found at *Pithekoussai* was found in the acropolis dump on Monte di Vico in a disturbed context which dates from the Middle Bronze Age to the first century BC.[170] Secondly, iron-smithing has been attested at *Pithekoussai* during the early 7th century BC but not the smelting of ores.[171] Thirdly, ores are predominantly processed near the mine and subsequently transported as ingots or metal bars. This is recorded by the evidence from sites where ores were smelted but also by the merchant vessels.[172] The fourth

---

[164] *Cyropaedia* VII.2.5. Translated by W. Miller, Harvard University Press, reprint 1989. Xenophon lived from about 430 to 359 BC.

[165] Resources were introduced in section 1.4 under geological perspective. A general account of clay resources and the location of metal ores in central Italy is presented in sections 2.2 and 3.5.

[166] Bietti Sestieri forthcoming. See also chapter III.

[167] Parker presents a catalogue of shipwrecks recovered in the Meditarranean and dated from 2200 BC to the 15th century AD. The Hellenistic/Roman seaborne trade was balanced between 'bulk' and compound cargoes: Parker 1992, 20-1. The ships that are dated from 800 to 400 BC, list primarily transport amphorae as cargo but those wrecks which have been excavated and documented more extensively, demonstrate that they had a wide range of commodities on board.

[168] *cf.* Zimmer 1990, 19.

[169] *cf. Rasenna* 1986, 123. It is not my intention to dispute the relation between the metal resources of Etruria and this commercial interest but to question the implication that raw materials were transported in significant quantities over large distances during the Orientalising period. This corresponds with the doubt on bulk trade in minerals expressed by for example: Boardman 1990, 185.

[170] Buchner 1971, 66; Ridgway 1992 a, 84-5, 91, 99-100.

[171] Buchner 1971; Klein 1972. The smelting of iron requires substantial quantities of iron ores and charcoal: see section 3.4. This implies bulk transportation of iron ores to *Pithekoussai*.

[172] Smelting of ores and sites where smelting is attested, are discussed in chapter III. Parker lists 113 ships with ingots of some kind against 8 which contained ores: Parker 1992, 18-9. Ingots are frequently documented in wrecks dated to the Bronze Age. Only one of the eight vessels which contained ores amongst other commodities, might have been dated to the period that is examined in this thesis. Near Bajo de la Campana in Spain, merchandise was recovered which included lead ore: serial number 83 in Parker 1992. However, the goods might have belonged to

argument depends on an assessment of the economic conditions. Transport of raw materials over long distances is related to the type of material as well as to the scale of the economy. The transport of luxury raw materials such as ivory, ostrich eggs etc. is less affected by market restrictions than bulk shipment of base resources such as ores, grain or building materials. The transfer of these base resources is associated with the organisation of territories and states. Thus, the importation of grain in substantial quantities became feasible for classical Athens and mid-Republican Rome at a stage when the size of the population could no longer be maintained by the agricultural yield of their territories.[173] In relation with the Elban iron ores, transport by sea is recorded but occured at a stage later than around 700 BC. Seaborne trade of these ores has to be correlated to the scale of industrial activities, the economic organisation of the Etruscan city states, the quality of the Elban ores as well as to the possible deforestation of the woodlands on Elba.[174] Transportation of these iron ores is indicated from the 6th century BC onwards to Populonia and during the 5th century BC to Genoa.[175] At the moment there is no evidence that the Elban ores were transported before this period.

There is one example of bulk transportation of building materials for Rome. A new city wall was constructed during the first half of the 4th century BC. It was constructed with tuff that came from the *Grotta Oscura* quarries. These quarries are located near the Tiber, 15 km upstream in the newly won territory of Veii.[176] The motivation for the Romans for employing *Grotta Oscura* tuff might lay in the assertion of their control over this territory and its resources. Before the conquest of the territory of Veii, the Romans used stone which was quarried locally.[177]

The type of control over the resources is crucial for various reasons. Command over basic resources specifies social differentiation as well as the mode of exploitation. During the 8th and 7th centuries BC authority over resources was transformed fundamentally. This is related to the transition from ranked societies to early states. In a ranked society, land and resources may be nominally owned by chiefs but these chiefs also have to ensure that other members of the community have sufficient access to the same resources. Thus, there is a difference between:
1. owning while responsible for access and
2. actual control over basic resources which creates political power of an entirely different dimension. During the transition from step 1 to 2, the basic resources are transformed into capital resources. Wason considers that '*the main defining feature of social stratification is differential access to essential resources. A likely way of restricting access is through control of capital resources required for production such as agricultural land and mining areas. Stratification is unstable without mechanisms for its maintenance. Under a stratified system people experience differentiation in standard of living, security and even life expectancy far beyond distinctions in egalitarian or rank society. This requires unprecedented means of justification and enforcement*'.[178] The account by Wason is valuable

---

more than one wreck. Among the finds were amphorae which cannot predate the 2nd century BC and 13 elephant tusks with Phoenician script that are dated to the 5th/4th centuries BC. It is not documented in which wreck the ore was transported.

[173] Starr 1977, 164-5, 176; French 1964, 107-10; Cornell 1995, 385.

[174] Deforestation is discussed by: Wertime 1983.

[175] The subject of provenance and early use of iron ores in Antiquity requires more examination, both experimental and theoretical. Populonia is discussed in section 3.6.7. For Genoa I refer to: Giannichedda 1996, 70-1.

[176] The transport of ores from Elba to Populonia and of tuff from the Grotta Oscura quarries to Rome occurred by water transport over relatively short distances and thus represent instances which are far less expensive when compared to bulk transport over land over the same distance. See the following pages of this section.

[177] Blake 1947, 27-9; Coarelli 1988 b, 328; Ross Holloway 1996, 18-9, 91-102. DeLaine presents quantified data for the supply of ordinary bulk building materials to the city of Rome during a later period. She relates these building materials to data from the local geology: DeLaine 1995.

[178] Wason 1994, 57-8.

as a design for the transitions in central Italy from 800 to 400 BC but is too rigid. His description of the transition from communal to private ownership of resources scarcely allows for intermediate stages. It is recorded that the actual appropriation of resources only occurs with advancing state formation. During the early stages of this process, social inequality is elaborated but this stratification appears not to be immediately translated into private ownership of resources.[179]

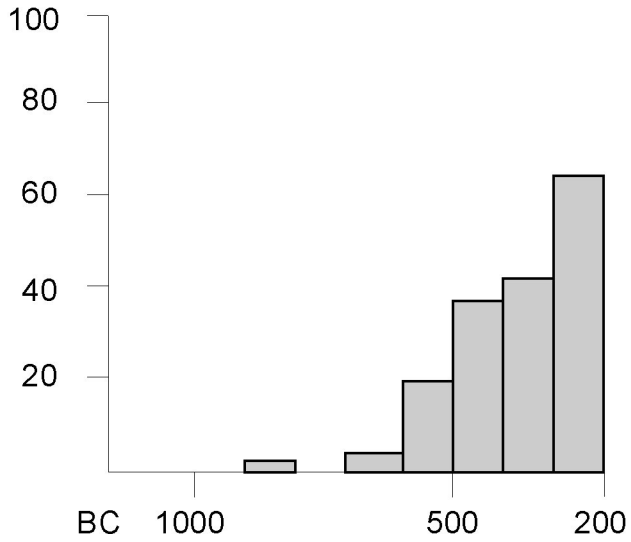


Fig. 5. Ancient Mediterranean shipwrecks from 1000 to 200 BC, grouped in centuries

The exploitation of resources is closely related to the means of transport which is indicated above since the means of transport dictate the expenses involved. The cost of transport overland far exceeded transport by water. For the Roman empire, detailed figures for sea, river and land transport are recorded. The ratio of the cost of transport by sea, river or land is 1:5:28.[180] For the period 800 to 400 BC, the transport costs will have been quantified indirectly but the ratio for the Roman empire presents an order of magnitude of the efforts involved. Labour expenditure severely restricted bulk transportation overland. The ethnographic record confirms this principle since it has been reported that clay sources may be located further away when they can be transported by raft or canoe.[181]

An intensification of all means of transport is recorded during the four centuries discussed in this study. The development of tracks and roads is presented in the maps of the individual sites examined in chapter II and III. It is evident that the various centres in central Italy were connected overland and that the increase in communication enhanced the use of the interior and interregional routes.[182] Moreover, the ancient routes connected the coastal areas with the sites in the interior. The commodities may have been carried by men, pack animals and carts.[183] The *Via Salaria* as well as the Tiber have been decisive for the development of proto-urban centres such as Ficana, Rome, Antemnae, Fidenae and Crustumerium. The control over the saltpans on the coast and the transport of salt along the *Via Salaria* inlands contributed much to the development of Rome.[184]

[179] Claessen and Skalník 1978, 641-5. See also section 1.8.

[180] Greene 1990, 39-42.

[181] Arnold 1989, 38-55.

[182] Early roads are discussed by: Quilici 1990, 12-5; Maaskant-Kleibrink 1987, 12-3; Bietti Sestieri 1992 b, 72-5 and Bartoloni 1989, 152-4.

[183] A cart for processions is illustrated on a terracotta plaque from Poggio Civitate: Cristofani 1975, 15. In addition a ceremonial cart is recovered in the Tomba Bernardini: Emiliozzi 1988. Less elaborate carts for the transfer of commodities have not been excavated.

[184] Giovannini 1985.

Apart from the Tiber, major rivers in central Italy are the Arno and the Volturno. Numerous minor rivers such as the Ombrone, Fiora, Astura and Carigliano bisect the interior. Most of these smaller rivers were navigable in antiquity and were used as waterways which ran from the coast to the interior.[185] Rafts, boats and dugouts must have been employed for navigation.[186]

An increase in seaborne trade is implied by Figure 5 which presents the number of ancient shipwrecks by century during the period 1000 to 200 BC. A steady growth in the interregional trade in the Mediterranean is suggested from the 7th century BC and later. In addition, Figure 5 gives an impression of the proportion of seaborne trade during the period 800 to 400 BC in relation to previous and later periods.[187] The steady increase was based on the incorporation of the western Mediterranean into the general trade networks. This is reflected by the considerable increase in the number of wrecks reported along the Italian and French coasts from the 7th century BC on. Parker listed about 60 wrecks for the period 800 to 400 BC of which more than 50% were discovered along the shorelines of Italy and France.[188] The evidence from the shipwrecks demonstrates the existence of directional trade from Etruria to the south coast of France.[189] Detailed accounts on the Giglio shipwreck and the Porticello wreck illustrate that the cargo was of mixed provenance.[190] The increase in seaborne trade and the importance of the communication routes between the seaside and the interior is reflected in the development of centres such as Lavinium, *Caere*, Tarquinia, Vulci and Vetulonia which are located nearby the Tyrrhenean coast. Populonia and *emporia* such as *Pyrgi*, Gravisca and Regisvilla are located directly on the coast. These entrepôts developed during the 6th century BC and were highly ritualised. They restricted the access of foreigners to the interior communities.[191] During the 5th century BC there is a general decline of foreign imports into central Italy as well as a dimunition of the Etruscan seaborne trade.[192] After the battle of *Cumae*, Etruscan trade concentrated on central Italy itself, regions in northern Italy and on territories to the north of the Alps.[193] Maritime trade appears to be confined to the northern region of the Tyrrhenean coast and is substantiated by the exchange of ores and metals in which Elba, and towns such as Aleria and Populonia, participated.[194]

The account of the means of transport necessitates a description of the trading patterns. As mentioned above, a premiss of this study is the domestic redistribution of resources. The internal orientation of the economy is also reflected by the trading patterns. There are, however, long-standing controversies over the working of the domestic economy and the position of external trade.[195] It is not my intention to deny the role of external or international trade

---

[185] *cf.* Segre 1986; Guidi 1986. See also the other contributions in *Tevere e Le altre Vie d'Acqua del Lazio Antico* (*Archeologia Laziale* VII,2, Quaderni di Archeologia Etrusco-Italica 12, 1986, esp. p. 30-156). The papers in this publication discuss primarily the development of the settlement patterns along the Tiber.

[186] Bonino 1981; Quilici Gigli 1986, 82-9.

[187] An aspect which is not incorporated in Figure 5 is the enlargement of the shipload in time.

[188] A substantial number of these wrecks were not excavated. They have not been documented in detail and the reports might be based on the recovery of some transport *amphorae* by divers and fishermen.

[189] Bouloumié 1982, 52, 58-67.

[190] *cf.* Parker 1992.

[191] Arafat and Morgan 1994, 113. For Regisvilla I refer to: Morselli and Tortorici 1985.

[192] *cf.* Rasenna 1985, 125-39; Martelli 1985; Gran-Aymerich 1991, 23; Prayon 1981; Hannestad 1988. See, however, also: Cristofani 1984.

[193] *cf.* von Hase 1993, 194; Shefton 1995; Pearce 1995.

[194] Cristofani 1995, 133.

[195] The restricted significance of imported ceramic table wares in trade is recently stressed by Gill and Vickers. They argue that the value of Greek painted pottery is overestimated. According to them the reference for the Attic pottery caused a distorted view of the importance of pottery

but it was marginal when compared with the internal commodity flow. Access to foreign commodities was regulated in central Italy by the elite and was thus by nature restricted. The impact of this curtailed trade was nevertheless considerable but can be related to the relatively open disposition of the communities in central Italy during the 8th to 6th centuries BC. The general transition during this period has led to diffusionist concepts but these notions do not account for the long-established and comprehensive internal networks, the thoroughness of the development described nor for the fast growth of the regional markets. The internal distribution and trade stimulated ultimately the urban growth in central Italy and not the external trade. In my opinion the internal trade can be reconstructed as a redistribution exchange combined with a modified, limited market exchange. The existence of an accounting system using standardised quantities will be substantiated in chapter IV but the extent to which this system was applied appears to be confined. This is one of the arguments for limited external exchange. Other arguments for this proposition are recorded by the distribution of the locally produced, decorated pottery, the control over the *emporia* and by the exchange mechanisms.[196] These aspects are discussed separately starting with the distribution of locally produced pottery.

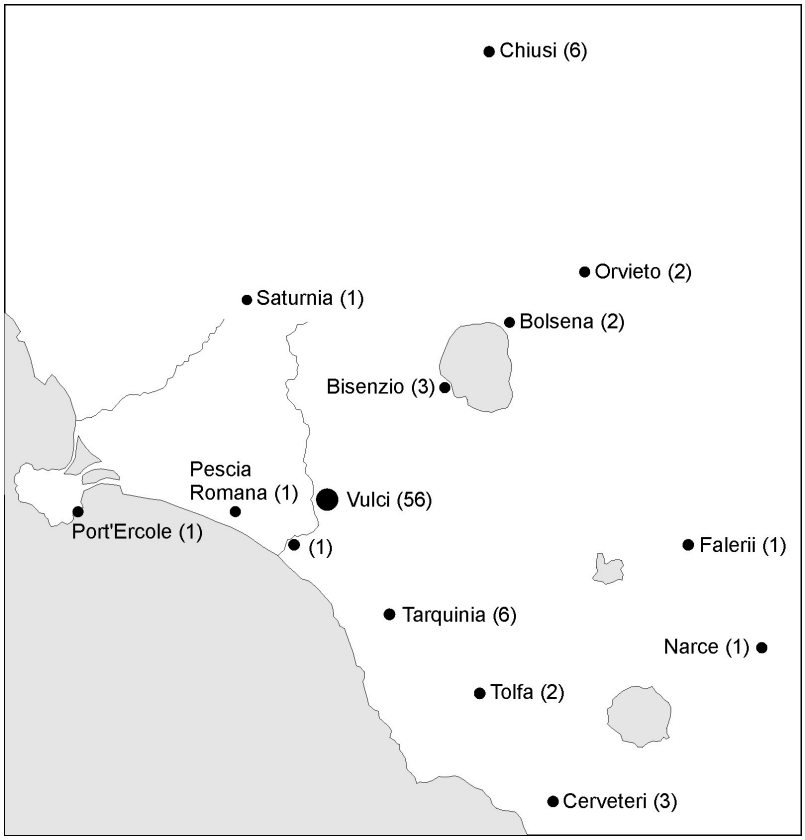


Fig. 6. The distribution of vessels which are assigned to the Micali painter and his followers

in trade: Gill 1994; Gill and Vickers 1990. Their remarks can be seen as a reaction against the Hellenist tradition in classical archaeology: *cf.* Morris 1994 a. This tradition and its consequences for central Italy is illustrated by a remark that was made by Hemelrijk while discussing the 'Greek' potters who made the *Caeretan* hydria in or near *Caere*: '*Many of the vases they produced seem to have been made for Greek immigrants; after a while there is a certain decline in the mythological interest and intelligibility of the scenes which may perhaps be explained by the influence of the Etruscan customers who were of course, far less literate than the masters and their Greek friends*': Hemelrijk 1984, 193.

[196] *cf.* Arnold 1989, 20-60. Arnold examines the resources for ceramic production. The *emporia* are discussed in this section on *Economic development*. The exchange mechanisms are primarily examined in Chapter IV.

The locally produced pottery can be subdivided in coarse and fine wares. The coarse wares, that is the *impasto* production far excedes in quantity the fine wares. This statement is based on figures from settlement contexts. The recent excavation on the plateau of *Caere* demonstrates that the *impasto* production outnumbers the quantity of fine wares.[197] The predominance of the *impasto* pottery has also been quantified for Rome and *Satricum*.[198] It is generally assumed that *impasto* pottery is locally produced and distributed. A study of the reallocation over the hinterland of *impasto* fabrics which can be related to a specific workshop, is not available. Traditionally, research has concentrated on fine ceramics, especially the decorated fine wares, preferably imported from Greece. Fine wares are proportionately better represented in tombs and sanctuaries but in most cases still do not outnumber the coarse wares. It is important for the rest of this study to stress that the *impasto* production in quantity excedes the other wares for it exemplifies the internal production and distribution mechanisms.

The exchange of fine ceramic table wares is also dictated by the demand within the individual centres. Regional trade in these wares was limited. The production of *amphorae* with double spirals and the subsequent production of *bucchero* is related to the indigenous tradition of craft specialisation. Various production centres of fine *impasto* vessels have been identified, one of which is located at *Satricum*. On account of uniformity of technical characteristics, morphology and decoration, Beijer demonstrated that fine *impasto amphorae* are produced locally in the decades around the middle of the 7th century BC. The quality of these vases is distinctive because the artisan pre-treated the clay, used a wheel and thus could produce thin walled *amphorae*. The distribution in *Latium Vetus* of the *amphorae* which were made at *Satricum*, was restricted.[199]

During the late 6th and early 5th centuries BC, the inter-regional distribution of fine wares was still limited. Hemelrijk for example, assigns the provenance of most of the *Caeretan* hydriae to *Caere* itself.[200] Figure 6 illustrates the distribution of the vessels assigned to the Micali painter and his followers. They are predominantly found in Vulci and its territory (about 70 %). The remaining vessels were discovered in Etruria (28 %) and the Faliscan territory (2 vessels).[201] Although Spivey assigns these 86 vases slightly differently over the Etruscan countryside when compared with Figure 6, the conclusion remains that '*the Micali painter worked chiefly to fulfil a local demand at Vulci and only secondarily exported surplus to destinations for the most part already established within the trading patterns of archaic Etruria*'.[202] Even at Gravisca, the ancient entrepôt of Tarquinia, the local pottery outnumbers the imports. The imported, black-glazed Attic pottery accounts for about 1/3rd of the excavated ceramics while 2/3rds of the pottery is attributed to various Etruscan workshops.[203]

These examples from *Satricum*, *Caere*, Vulci and Gravisca demonstrate, in my opinion, that the internal demand created a market for the local pottery workshops and thus encouraged craft specialisation. The close connection between pottery workshops and distinct proto-urban and urban centres makes it less likely that these potters were itinerant.[204] This conclusion agrees with ethnographical evidence which demonstrates that the use of the

---

[197] Cristofani 1992, 174-7; Cristofani 1993, 273.

[198] *cf.* Carafa 1995, 254-62; Bouma *et alii* 1995, 189-92.

[199] Beijer 1991 b.

[200] Hemelrijk 1984, 164.

[201] Rizzo 1988, 85.

[202] Spivey 1987, 76.

[203] Valentini 1993, 263-5. A definite attribution to specific Etruscan production centres remains difficult but some of the workshops are located at Tarquinia and *Falerii Veteris*.

[204] The debate on itinerant versus settled potters is discussed in chapter II which also examines the processes which enhanced the local demand.

potters' wheel generally requires '*a fixed installation housed in a workshop*'.[205]

Another argument for the strength of the internal market is that the imported pottery is widely imitated in central Italy. The imported pottery was copied for internal consumption almost immediately after an initial period of external trade.[206] The influence of external models can be detected in both the production techniques and in the typology. The transfer of form and function was probably initiated by immigrant craftsmen. The local imitation also illustrates the limits of the seaborne trade in fine table wares.

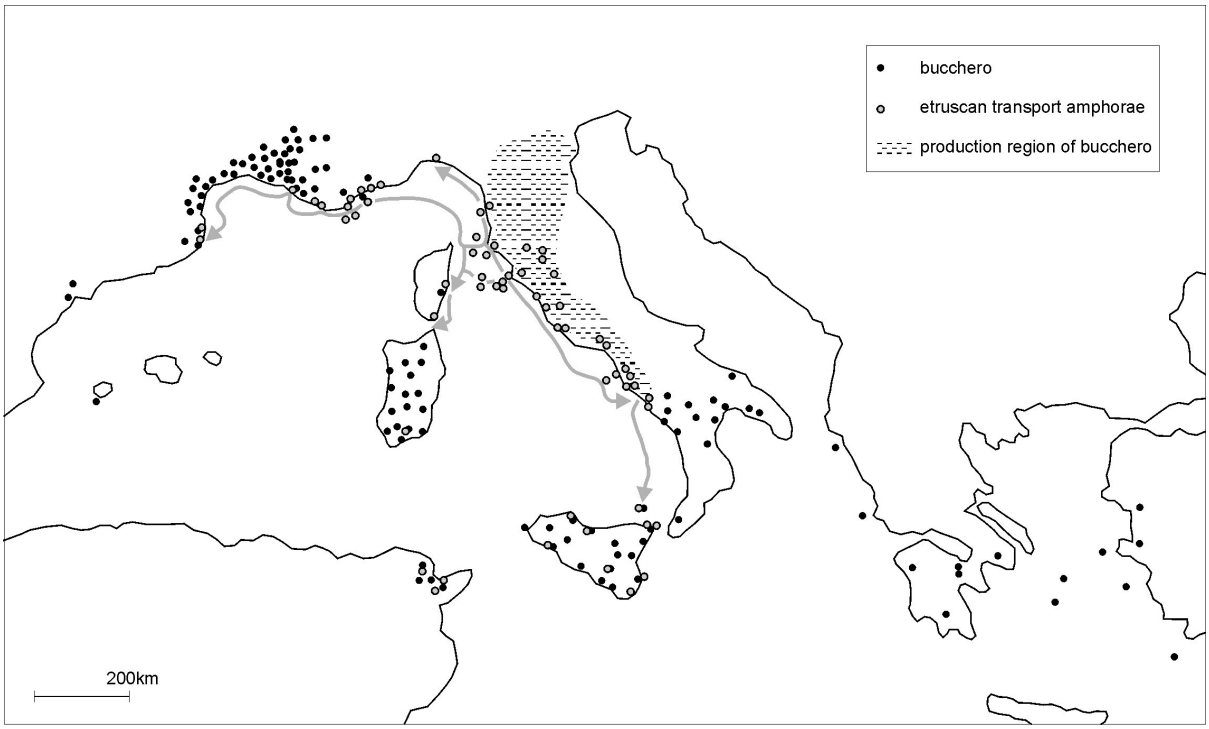


Fig. 7. Find spots of Etruscan amphorae and bucchero

The internal distribution can be compared with the seaborne trade of the ceramics made in central Italy. The export to other regions is predominantly directed towards the west Mediterranean, especially to areas in Italy itself and to the south coast of France. The Greek presence in France is of a later stage. Bouloumié considers that the Greek competition with the Etruscan traders emerged from the second half of the 6th century BC.[207] Directional trade from Etruria to France is indicated by the presence of Etruscan *amphorae* in at least 90 sites. Saint-Blaise might even have been an entrepôt because more than 400 Etruscan transport *amphorae* are reported from there.[208] The distribution of Etruscan artefacts over the Mediterranean region is presented in Figure 7. It demonstrates that the communities in central Italy had to cooperate within a trade network that also involved the Phoenicians and their satellites in the western Mediterranean. This cooperation is reflected in the treaties between Carthage and towns in central Italy from the 6th century BC.[209] Early exchange with Carthage is recorded by recent research of the

[205] Peacock 1982, 28.

[206] *cf*. section 2.1.

[207] Bouloumié 1982, 64-7.

[208] Bouloumié 1982, 58-60. Directional trade is the transfer of commodities from the production centre to specific destinations.

[209] *cf*. Cornell 1995, 210-4; Cristofani 1984.

University of Hamburg (Germany). The settlement excavations demonstrate that the Italian imports dominate particularly during the late 8th and 7th centuries BC. Noteworthy is the suggestion that some of the oldest transport *amphorae* derived from central Italy. These were found in layer IIa1 which is dated by the Hamburg team to the late 8th century BC.[210] This implies early contacts between the communities of central Italy and the Levantines and finds its counterpart in the Phoenician transport *amphorae* found in *Latium Vetus.*[211]

The quantity of Etruscan artefacts in Greece is confined. The importance of early Etruscan bronzes found at Olympia and a few other important Greek sanctuaries, is a subject of controversy. Some scholars imply that these artefacts are spoils from military raids in central Italy.[212] Others, such as Kilian, suggest that the Villanovan copper alloy artefacts in Olympia and Delphi signal precolonial contacts between communities in Greece and central Italy.[213] These Villanovan metal goods match the Early Greek imports in central Italy, such as the Geometric pottery found at Veii.[214] Considering on the one hand the internal strenght of the Italian social-economic relations during the early Iron Age, and on the other hand the upsurge of *Pithekoussai* and the Greek colonial movement in southern Italy during the late 8th and 7th centuries BC, one should allow for some precolonial contacts.[215]

In later centuries the evidence for Italic goods in Greece appears to have been even more limited. Some Etruscan *bucchero* pottery dated to the 6th century BC, was found in Corinth and a few other sites in Greece.[216] The number of artefacts involved does not suggest directional trade from central Italy to Greece. They might have been brought from Italy by Greek merchants returning to their homeland.

An intriguing feature of the trade networks in central Italy are the *emporia* or entrepôts.[217] Some of these trading posts are well defined, such as the *emporia* at *Pyrgi*, Gravisca and Regisvilla. Others, such as the *Forum Boarium* in Rome or the extra-urban sanctuary of *Sol Indiges* near the mouth of the *Numicus* at Lavinium, remain ambivalent.[218]

---

[210] Niemeyer and Docter 1993, 230-4. The early date by Niemeyer and Docter of Italian imports to Carthage is associated with imports from other regions than central Italy: Niemeyer and Docter 1993, 226-30; Docter 1997, 192-215. Von Hase considers that trade between Etruria and Carthage is documented from 660/650 BC onwards. He listed 64 *bucchero* vessels which were recovered in tombs and reports that this outnumbers other sites outside Etruria: von Hase 1993.

[211] Botto 1990.

[212] Hermann, 1983, 284-90; Niemeyer 1993, 341. Hermann catalogues 21 fragments of copper alloy shields which he dates from about 750 to 650 BC.

[213] Kilian 1977.

[214] Ridgway 1992 a, 29, 129-38.

[215] *cf.* Bietti Sestieri forthcoming. See also section 3.6.1. As mentioned above, I consider the almost immediate imitation of imported pottery in Italy to be an argument for the strenght of the internal market. Imitation records, in my opinion the increasing demand of the indigenous communities and not their backwardness as is implied by those favouring a Hellenocentric account: *cf.* Gill 1994; Gill and Vickers 1990; Morris 1994 a and Hemelrijk 1984, 193.

[216] For the information on *bucchero* in Greece I would like to thank my colleague Marja Vink. *cf.* Weinberg 1948, 214 and MacIntosh 1974. MacIntosh catalogued 30 *bucchero* sherds from Corinth. In addition some *bucchero* is reported at Perachora and at Emporio (Chios): MacIntosh 1974, 43. Lawall who studied imports of transport *amphorae* to Athens during the 5th century BC shows that the economic contacts are predominantly directed towards Greece and the eastern Mediterranean: Lawall 1995.

[217] *Emporion*, gateway community, entrepôt and port of trade are in this study used as synonyms.

[218] The *Forum Boarium* is interpreted as *emporion* by La Rocca, Coarelli and Cornell: La Rocca 1977; Coarelli 1988 a; Cornell 1995, 69, 109-12, 162. See also: Bartoloni 1989-1990. The sanctuary of *Sol Indiges* at Lavinium is included as a possible location for a trading place on account of its geographic position, its nomenclature with its Aeneas connotation and on account of the quadrangular precinct with sides of 110 m each in which a building is situated. Details on this site are scarce but the circumstances can be compared with those found at other trading places: Fenelli 1984, note 7; *Grande Roma* 1990, 184; Bouma 1996 part III, 52-3. One could even construct an argument to incorporate *Satricum* with the temple of *Mater Matuta* into the *emporic* model on account of the finds and the association of *Mater Matuta* with trading

A description of the characteristics of *emporia* justifies consideration for it supports an interpretation of the exchange mechanisms. A hypothesis for early exchange in central Italy has to incorporate the following aspects:
- Levantine and Greek imports;
- imitation of technology and typology;
- conspicuous local consumption;
- standardisation, and eventually
- the local manufacture in workshops of commodities which are transferred within a restricted market system.

Hodges distinguishes three stages for gateway communities which may not directly apply to the situation in central Italy but which present some interesting ideas.[219] In his model, *emporia* of type A are strictly controlled import centres exchanging products during fairs. Foreign traders may visit these sites but they did not settle. Type A gateway communities remain enigmatic for they are difficult to detect with archaeological means.[220] They are associated with *ad hoc* or semi-permanent structures such as huts. Hodges remarks that '*not surprisingly ... the inception of type A gateway communities coincides with inflation in the destruction of goods in a highly conspicuous burial rite*'.[221] This could reflect conditions in central Italy during the Orientalising Period and it is noteworthy that in his description the exchange activities are strictly controlled.

Gateway communities of type B are described as partly controlled centres for trade and production which develop into free markets, attract foreign merchants and stimulate competition. They maximise the hitherto periodic exchange and are distinguished by planned streets and dwellings. Increased numbers of foreign traders inhabit the site as well as a considerable native workforce. The emergence of this second stage has considerable socio-economic implications. They are commonly the product of trade agreements with great economic potential for they stimulate the regional exchange mechanisms which is transformed into a more commercial system.

The third stage of *emporia* reflects a decline in exchange activities. The *emporion* is either abandonned or continues to function within the regional economy. The native workforce may maintain a partially commercialised production level. As a result of this economic transition there would be few imports.[222] This could actually reflect a strategy because long-distance trade may have become a threat once the scale of it crossed a certain threshold. The strategy could involve sumptuary laws or the legal confinement of the *emporia* to some neutral location along the

---

posts. To my opinion *Satricum* rather illustrates that sanctuaries attract consumption and production which could lead to early markets. As such these sanctuaries can be considered as incipient *fora* especially when there are no primary indications for foreign activities as for instance, Phoenician or Greek inscriptions: see section 4.6.

[219] His model is based on the situation in north-west Europe during the period 600 to 1000 AD and benefited from an anthropological approach: Hodges 1982; 1988 a. A readjustment of the model for the situation in Denmark which included the minor sites, was presented by Crumlin-Pedersen during the 18th *Kroon-Voordracht:*; Crumlin-Pedersen 1996, 25-7. The arrangements in central Italy from 800 to 400 BC are probably less distinct than in early medieval north-west Europe.

[220] Prior to the establishment of type A, 'silent trade' may have occurred as was described by Herod. His report on the trade between Phoenician/Punic merchants and north African tribes illustrates the beginnings of trade between dissimilar communities: '*The Carthaginians also tell us that they trade with a race of men who live in a part of Lybia beyond the Pillars of Heracles. On reaching this country, they unload their goods, arrange them tidily along the beach, and then, returning to their boats, raise a smoke. Seeing the smoke, the natives come down to the beach, place on the ground a certain quantity of gold in exchange for the goods, and go off again to a distance. The Carthaginians then come ashore and take a look at the gold; and if they think it represents a fair price for their wares, they collect it and go away; if, on the other hand, it seems too little, they go back aboard and wait, and the natives come and add to the gold until they are satisfied. There is perfect honesty on both sides; the Carthaginians never touch the gold until it equals in value what they have offered for sale, and the natives never touch the goods until the gold has been taken away*' (Herodotos: 307; translated by A. de Selincourt).
Under these conditions acculturation will be kept to a minimum and structures along the coast cannot be excavated. It is probably that in these conditions the natives give the goods they have acquired another function than intended by the manufacturers.

[221] Hodges 1988 a, 44.

[222] Hodges 1982, 50-2, 65, 197.

coast. I consider it possible that this concept may actually apply to the situation around 600 BC in central Italy. In both regions a restriction of external trade can be reconstructed. In *Latium Vetus*, the Levantine and Greek imports are curtailed in line with restrictions of the conspicuous funerary practice. In Etruria this period reflects the marked development of entrepôts such as *Pyrgi*, Gravisca and Regisvilla which became the gateway communities for long-distance trade of the Etruscan early states respectively of *Caere*, Tarquinia and Vulci. These highly ritualised entrepôts controlled foreign access to the markets of central Italy and functioned as an institutional method to restrict the zone of commodity exchange. Internal distribution of commodities may have been structured along other lines. The spheres of exchange for prestige and subsistence items are likely to have been separated. This separation can, however, never be absolute. Appadurai states that '*many societies create specialised arenas for tournaments of value in which specialised commodity tokens are traded, and such trade, through the economies of status, power or wealth, affects more mundane commodity flows*'.[223]

According to Hodges the three types of gateway communities are summarised as:
Type A which represents import trade,
Type B which is characterised by import trade in combination with local production while
Type C exemplifies a production centre with internal, regional exchange.[224]

These distinctions can be related to the change in the Levantine and Greek commodity flow to central Italy during the decades around 600 BC. Prior to this period, type A and B gateway communities probably existed because import and local production which aimed at imitation is attested for central Italy from the 8th century BC. It is likely that import and manufacture took place at early coastal settlements such as *Caere*, Tarquinia and Vulci. Such a design was also suggested for the *Forum Boarium* with its location outside the sacred boundary of the city and close to the river harbour.[225] These activities would have assisted the development of the emerging centres along the coast of southern Etruria and along the Tiber.

There may have been type A gateway communities along the coast of central Italy well before the middle of the 8th century BC. *Pithekoussai* can be considered a type B *emporion* because commerce and workshops are attested while Phoenician merchants were attracted to the Euboean settlement.[226] Until about the late 7th century BC, a steady increase in foreign imports is shown by the funeral accessories and the votive deposits of central Italy. Eventually, this increase may have resulted in a certain threshold and threat to the existing socio-economic conditions which neccessitated a response. The decline in foreign imports to *Latium Vetus* after 600 BC has been acknowledged in relation to the changes in funerary practice.[227] The custom of burying valuable imported objects with the dead or their deposition at sanctuaries assisted their removal from circulation as well as the demand for these imports. Demand became confined with the transition in funerary rite around 600 BC. This change has been interpeted as a legal restriction which was probably a consequence of altered political and ideological concepts.[228] It is reflected by the definite shift during the 7th century BC from 'personal' hoards, exemplified in the rich burials, to 'institutionalised' hoards, exemplified in the wealth of some of the votive deposit.[229] Thus the elite of *Latium Vetus*

[223] Appadurai 1986, 50.

[224] A similar outline of emergence, *floruit* and decline is presented by Torelli for the archaic *emporia* in central Italy: Torelli 1983, 483-4.

[225] La Rocca 1977; Coarelli 1988 a.

[226] Buchner 1971; 1982; Deriu, Buchner and Ridgway 1986. The nature of the settlement at *Pithekoussai* is disputed. It might have been an *emporion* or a colony (*apoikia*), though probably displays features of both: Ridgway 1992 a, 107-9. One aspect which is mentioned by Hodges as characteristic for type B *emporia*, has not been identified at *Pithekoussai* which is the native workforce. However, it has been suggested by Buchner that the settlers married native wives: Buchner 1979, 135; Coldstream 1994. See also section 3.6.1.

[227] *cf.* Colonna 1977; Ross Holloway 1996, 168-70.

[228] Cornell 1995, 105-8.

[229] Nijboer 1994, 11-2. See also Bartoloni for an inventory of the sanctuaries at Rome: Bartoloni 1989-1990.

could remain the custodian of restricted exchange because they controlled the sanctuaries. Around 600 BC, it seems that the religious authorities directed the exchange mechanisms. These authorities probably derived from the same families which in the previous decades furnished the tombs of their ancestors with such extravagance. The interregional exchange from Etruria to *Latium Vetus* appears to have been less affected by trade regulations.[230]

The situation in Etruria was different which is marked by a dissimilar regulation of external trade. My hypothesis is that in Etruria foreign merchants and maybe even migrating craftsmen, became confined to a neutral location along the coast in order to counteract their adverse effects. The founding of these *emporia* may be the result of trade agreements between the local establishment and foreign representatives. An argument in favour of this theory would be the absence of settlement traces before approximately 600 BC in *emporia* such as *Pyrgi*, Gravisca and Regisvilla. There is some evidence which supports this idea.

The settlement at *Pyrgi* dates back to the early 6th century BC. The buildings appear to be aligned on a grid plan and the site was not occupied at the time of its foundation.[231] Phoenician/Punic and Greek merchants resided in the port but it has not been established whether the settlement contained any workshops. The sanctuary is famous for its gold tablets with Etruscan and Phoenician script and its fabulous wealth.[232] The tablets testify the existence of trade agreements between Carthage and *Caere* by the end of the 6th century BC.[233] The Greek coins which were hoarded at the sanctuary imply a strict seperation of exchange mechanisms because these coins were subsequently not reminted nor distributed in the local economy.[234] This must have been a deliberate policy because coins did not circulate in central Italy during this period though they were evidently accepted at the *emporia*.

In the entrepôt at Gravisca, the port of Tarquinia, a sanctuary was established in the early 6th century BC which was dedicated to Hera. A substantial quantity of imported pottery dates from around 600 BC and implies that during this period the site became frequented. Much of the pottery found at the site is of Ionic origin. In addition, the names of merchants are recorded in the dedications and these names show that most of them came from the eastern Aegean. For example, the well-known merchant Sostratos of Aegina dedicated a stone anchor to Apollo at Gravisca. The traders stayed here but it has not been confirmed whether immigrant craftsmen produced commodities in the *emporion*.[235]

Regisvilla, the trading port of Vulci, was intensely frequented during the late 6th and 5th centuries BC.

---

[230] *cf.* Beijer 1995, 61-2; Bouma *et alii* 1995, 192-3.

[231] Colonna 1981, 13-20. For a general account on Pyrgi, I refer to: Serra Ridgway 1990. Colonna *et alii* have documented small quantities of prehistoric finds at Pyrgi: Colonna *et alii* 1970; 1988/89. This pottery indicates that the area was frequented before the establishment of the *emporion*. The excavators have however, not reported any structural remains prior to about 600 BC.

[232] Dionysios of Syracuse plundered the sanctuary and took away a thousand talents of coins in addition to statues and other votives; Pyrgi, *Notizie degli Scavi* 1959, 261-3 and Prayon 1981.

[233] The tablets can be related to an account of Aristotle (4th century BC), who referred to treaties between Carthage and the Etruscans as a particular type of trading agreement in which mutual rights and privileges were laid down: *Politeia* 1280a36.

[234] Nine silver tetradrachms of various provenances dated to 440 BC and before, remained at the sanctuary after the plunderings in the 4th century BC and the ritual dismantling during the first half of the 3rd century BC: *Santuari d'Etruria* 1985, 139-41 and Colonna *et alii* 1970, 263-6.

[235] Torelli 1977; 1982; Torelli *et alii* 1971, 195-9; *Santuari d'Etruria* 1985, 141-4; Boldrini 1994, 253-64 and Valentini 1993, 263-9. On Sostratos: *cf.* Herodotos (4.152) and Gill 1994, 99-101. Torelli presented a short note on hut and sheltering structures which he dates to the beginning of the 6th century BC: Torelli 1977, 400-1. Moreover, he mentions two early *pozzi* that from his description might be explained as levigation tanks but which are not interpreted as such by the excavator: see section 2.3 for the levigation process. In one of the *pozzi* a Greek inscription was found. I consider it feasible that at Gravisca there is some evidence for pottery production by immigrant potters. Unfortunately this is not supported by the publications since a strict religuous interpretation of the data is preferred. For me it remains peculiar that so far in central Italy no *emporia* of type B are reported. It is disturbing that the oldest *emporion* in Italy at *Pithekoussai* has presented a considerable corpus of primary data on manufacture, while the gateway communities in central Italy so far only testify exchange within a ritual context.

Foundation walls of two buildings were found which can be related to other Archaic remains. The evidence suggests a regular plan while the quantity of imported pottery demonstrates its commercial character. A sanctuary or workshops are not reported. In the upper strata about 40% of the excavated pottery derives from transport *amphorae* most of which are of east Greek origin. Etruscan and Phoenician/Punic *amphorae* are also present in notable amounts.[236]

The three *emporia* at *Pyrgi*, Gravisca and Regisvilla imply that from approximately 600 BC, foreign merchants had restricted access to the Etruscan communities.[237] This hypothesis is substantiated by the evident separation of exchange mechanisms since Greek coins were accepted but not distributed internally. Due to the limited excavations which have not revealed any industrial structures, the three gateway communities are so far monumental examples of type A *emporia*. I consider that regulation became necessary around 600 BC at the height of the trade with merchants from eastern Greece and increasing commerce with Athens.[238] It seems that there was less demarcation of trading activities during the Orientalising Period.

In *Latium Vetus* the foreign trade was curtailed by adjusting the destruction of material goods at funerals while in Etruria restriction was obtained by the *emporia*. Both regions reacted differently towards the possible threat of uncontrolled consumption. The threshold and the reaction will have been directed by the difference in the quality of resources in both areas. In combination with a model that was formulated by Niemeyer, one may be able to identify the features of this threshold.

Niemeyer distinguished the Phoenician and Greek trading patterns on the basis of differences in settlement characteristics. It is possible that there was an initial period of coexistence between Levantines and Greeks in Italy.[239] After this period both groups diverged. Phoenician *emporia* were established near the centres of metal trade. These Phoenician/Italian gateway communities are perceived as factories and commercial centres of type B *emporia* in accordance with the other Phoenician entrepôts in the western Mediterranean. The Greek settlements in southern Italy were marked by an agrarian colonisation. Comparing the Phoenician with the Greek trading model, it is likely that the crux for the elite in central Italy became the control of agricultural land and other natural resources as well as the protection of the internal distribution network. It is probable that they confined foreign commerce to neutral locations along the coast in order to prevent further cultural erosion by protecting the internal conditions as well as by restraining foreigners from owning land and other subsistence resources. I, therefore, suggest that in the decades around 600 BC, the establishment in central Italy took measures for economic regulation. This does not imply that imports ceased or that the process of acculturation terminated. Nevertheless it signals the beginning of a deliberate preservation of the internal social-economic conditions and, therefore, records a notable stage in the early state formation of both regions.

In essence, the distinction made by Niemeyer is the difference between co-operation and control. There are many indications that the establishment of central Italy co-operated in politics and economics with the Phoenicians/Carthaginians rather than being controlled by the various Greek communities. In this context, the alliances formed between Carthage and communities in central Italy to challenge the expanding trading interests of Greek *poleis* and their colonies, are symptomatic.[240]

---

[236] Colonna 1977, 210-3; Morselli and Tortorici, 1985. Other *emporia* along the coast such as Punicum and Alsium are not discussed in this section.

[237] *cf.* Torelli 1983, 482-5; Arafat and Morgan 1994, 110-3 and Martelli 1985, 178, 181. In my opinion, restricted access does not necessarily imply that foreign merchants and craftsmen were completely excluded from integration into the communities of central Italy.

[238] Martelli 1985; Hannestad 1988.

[239] This first stage is exemplified by the excavations at *Pithekoussai*. Niemeyer 1990; 1993.

[240] Prayon 1981; Cristofani 1984 and Cornell 1995, 210-4. This statement is made while acknowledging the influence of Greek culture in central Italy as well as on other regions in the Mediterranean. It is not my intention to participate in the popular reaction against the hellenocentric bias in previous generations of scholarship. Formal co-operation between Greek *poleis* and Etruscans is attested by the

The discourse on *emporia* is closely related to the means of exchange. These means varied considerably during the period 800 to 400 BC but depart from the process of commoditisation. Hart has described this process as a sequence of characteristic '*stages in the progressive abstraction of social labour*'.[241] This sequence merits presentation since it provides a context for the range of possibilities in central Italy. Moreover, it is crucial for the interpretation of the evidence on pre-monetary exchange by quantification examined in chapter IV. The sequence of commoditisation involves the following steps.[242] The evolution of a commodity is described as:

1. A thing produced for use, an object standing outside the producer;
2. Alienated, an object made for the use of another, someone outside the unit of production;
3. The product of divided labour. Specialisation requires and enhances social interdependence: an interlocking system for the provision of individual and social needs necessitates organisation of mutual rights and obligations. The founding principle of divided labour is sexual;
4. Circulated by means of exchange, reciprocal transfer is a common, but not the only, way of circulating products of divided labour;
5. Exchanged through the market mechanism. A significant step in the abstraction of social labour is the determination of quantitative exchange value often in a customary setting;
6. Crystallised as pure exchange value, i.e. money. Money is a commodity whose only use is as a means of exchange.[243]

As mentioned above, Greek coins were excluded from internal distribution and only had exchange value in the *emporia*. In central Italy, Greek coins returned to the state they effectively represented, that is bullion. In chapter IV I will argue that commodities could have been any of the steps 1 to 5 but that exchange was directed by steps 4 and 5. For instance, the production of pottery during the period 800 to 400 BC, is a revealing example of step 3 and involved a shift from female potters to male craftsmen. This process will be examined in detail in chapter II. Steps 4 and 5 introduce means of exchange which includes the three principles of economic exchange which are reciprocity, redistribution and the market mechanism. The three principles usually coexist on various levels and for different commodities though on the whole an economy is characterised by the predominant principle.

Reciprocal exchange is locked into patterns of social relationships and consists of the deliverance of goods and services in return for comparable goods and services in value. Equivalence is the basis of a reciprocal economy rather than loss and profit. It includes gift-exchange between recognised social partners. Gift exchange involves exchange of valuables as acts of negotiation. It substantiates obligations and requires regular confirmation. Balanced reciprocity can incorporate economic trade of commodities.[244]

Redistribution occurs in many societies with chiefdoms and other structures of centralised, ruling power. It can be interpreted as obligatory payments to central political or religious authorities. Thus the surplus of goods and services are tranfered to this authority and redistributed according to status and occupation. The redistribution

---

establishment of a treasury by the *Caeretans* at Delphi and the Greek sanctuaries in Etruscan *emporia*. However, these signs of social economic co-operation are in my opinion less significant than the signs of collaboration between Carthage and central Italy. In the following chapters the amalgam of cultural features from the Levant and Greece will be a recurring theme. However, the adoption of foreign cultural traits is not equivalent to supremacy as is denoted by the different trading patterns of Phoenicians and Greeks which both lead to acculturation but which did ensue in dissimilar repercussions.

[241] Hart 1982, 40.

[242] The presentation of the sequence is almost similar to the account given by: Hart 1982, 40-1.

[243] Hart presents a total of 10 steps but the following steps 7 to 10, do not apply to the economies which are examined in this thesis. Hodges applied this sequence to the process of commoditisation during the Carolingian period in NW Europe: Hodges 1988 b.

[244] For a description of the three economic principles of exchange see for example: Fried 1967; Greene 1990, 45-8 and Enckevort 1991.

pattern is often based on tradition. Social and political considerations are on the whole more important than economic analysis. In this system craftsmen can concentrate on their profession without having to trouble about subsistence farming. Usually, the quality of their work is of a high standard. Examples of a redistributive economy are the early empires of the Near East and the Minoan palace economy.

A market economy is a form of integration. Production and distribution of goods and services are regulated according to supply and demand. The market system does not have to depend on coinage. Other forms of currency or even barter can obtain the same function. The market system brings together craftsmen, traders and consumers irrespective of their social position unlike the two other economic principles. The setting involves an authorised, sanctioned location where goods can be sold and currencies acquired. Before our century in which the market mechanism appears to be predominant, economies were based more on social and political interactions and capital markets were of secondary importance.

In central Italy during the 9th and early 8th centuries BC, trade in commodities was probably subsistence oriented. It was based on domestic production and consumption. Subsistence generated trade is usually seasonal and does not involve specialist traders, markets, currencies nor set rates of exchange. The reciprocal obligations prevent the accumulation of wealth. Trade in these conditions will satisfy basic needs and will on the whole, not generate a range of new specialist activities. Nevertheless, complex trading patterns might develop for the indirect transfer of a variety of resources which are not available to the local community.[245]

The introduction of foreign luxuries during the 8th century BC was associated with freedom of trade. The principle of freedom of trade is important for an understanding of the transitions which occurred in central Italy during the 8th and 7th centuries BC. This kind of trade readily develops when groups are involved which originate from elsewhere, such as in our case the Levantines and Greeks. Their position outside the community frees them from social obligations and the emerging cultural integration favours communication and the establishment of trade networks. Mediums of exchange appeared and the market principle was introduced.[246] Moreover, this trade stimulated internal changes in the modes of production which subsequently became directed to participate in the Mediterranean commercial arrangements.[247] The 7th century BC export of transport *amphorae*, *bucchero* and other commodities from central Italy to regions in primarily the western Mediterranean, records the effective transition of the internal mode of production. It is materialised by an increasing standardisation of the local artefacts. This will be exemplified in chapter II and III for the production of ceramics and metal commodities. The metallurgical output, for example, increased sharply during the 8th to 6th centuries BC.[248] The processes involved can be summarised as the transition of a subsistence oriented trade to an exchange oriented trade which developed from an initially limited import of luxury items assisted by freedom of trade, social-economic competition and a general economic growth.

I have argued that at the end of the 7th and the beginning of the 6th centuries BC, the freedom of trade became regulated in order to protect the internal social-economic conditions. The urbanisation process which progressed during the second half of the 7th and 6th centuries BC advanced the development of an internal market which is exemplified by the progressive standardisation of manufacture. Though quantification was introduced, exchange was probably still embedded within its social context. It is likely that reciprocity and redistribution were the principal exchange mechanisms.[249]

---

[245] Rowlands 1973, 591 and Bietti Sestieri forthcoming.

[246] Nijboer 1994. See chapter IV.

[247] Rowlands 1973, 593.

[248] This is examined in chapter III.

[249] The advance of market exchange in central Italy requires further research. The principle of quantification is difficult to assess and the few examples that are presented in chapter IV, are more or less coincidental. Future settlement excavations of the ancient, primary centres in central Italy might establish the structure and lay-out of early markets. It could have been an open space next to the sanctuary where people could gather,

During the 5th century BC external imports in central Italy appear to have faded somewhat. The towns with their separate territories became more-or-less self sufficient while they may have maintained the exchange mechanisms that had been previously established. It did not become necessary to progress to step 6 in the sequence of commoditisation and the system of coinage was not introduced until the 4th and 3rd centuries BC.

This general account of the economic development of central Italy requires adjustsments when applied to individual sites with primary industrial evidence. The examination of these sites will present a modified development for each individual settlement but which in essence will accommodate the outline presented above. Nevertheless, two topics remain to be singled out. These are:
a. the relation between gift exchange and other exchange mechanisms, and
b. the role of the sanctuaries.

Gift exchange of prestigious goods between members of the 'upper-class' has been given a prominent position by various scholars as the exchange mechanism during the Orientalising Period in both Etruria and *Latium Vetus*.[250] In my opinion gift exchange occurred but can never account for all forms of exchange during this period since it does not incorporate the means by which these gift were initially obtained nor does it clarify the production mechanisms. The connection between gift exchange and other means of transfer is intricate and miscellaneous. Gift exchange is based on relatively unreliable ties of negotiation. It can in time evolve into more stable forms of social relations based on periodic ritual, collective symbols and ideology.[251] These returning rituals propagate more constant, formal arrangements. With the increase in communication and trade during the 7th century BC, the principles of quantitative exchange were introduced and as a result promoted market mechanisms. It remains unclear to what extent quantitative exchange was applied and, therefore, to what extent markets functioned in central Italy. The indefinite character of the market conditions are illustrated in chapter IV but can be partly explained by the late arrival of coinage and the fragmented picture of the quantification or metrological systems in use.[252]

The importance of periodic rituals is demonstrated by the upsurge of sanctuaries during the 7th and 6th centuries BC. These sanctuaries also reflect a communal identity. It is noteworthy that the Levantine and Greek influence can be distinguished in specific rituals. The amalgam of indigenous and foreign ideology testifies to the freedom of communication and trade.[253] Moreover, this freedom is indicated by the ethnic diversity of the elite and the free movement of persons and groups between communities in central Italy.[254] The open disposition resulted in acculturation and the maturing of a cultural *koinè*, a shared cultural idiom throughout central Italy. The evolution of the sanctuaries encouraged the deposition of rich votive hoards which is one of the methods of storing economic surplus.[255] Thus, certain religious authorities were able to create reserves of wealth in favour of their institutions. These reserves will have stimulated new conditions for exchange in which the religious institutions played a major role. The transfer of wealth to the sanctuaries during the 7th and 6th centuries BC made some of these sanctuaries into political and productive centres. The elite who institutionalised these centres could thus regulate the early markets that developed around these sanctuaries.

---

eat and exchange goods: *cf*. Edlund-Berry 1989.

[250] *cf*. Bartoloni 1989, 201-2; Anzidei *et alii* 1985, 220 and Rathje 1988.

[251] Sahlins 1972, 136-7, 221.

[252] Quantification and the fragmentation of metrological systems is discussed in chapter IV.

[253] The Levantine and Greek influence on rituals is discussed by for example, Cornell and Burkert: Cornell 1995, 158-62; Burkert 1992, 46-53, 74, 111-2.

[254] *cf*. Ampolo 1976-1977; Cornell 1995, 158.

[255] Peroni 1979, 16. See however, also: Bartoloni 1989-1990.

The formation of sanctuaries is one of the features of centralisation. In central Italy, urban centres became furnished with temples while rural sanctuaries could be erected along territorial borders or at seats of certain *gentes*.[256] As such, the sanctuaries originally came to represent the religious, political as well as the social bond between centre and periphery. Nevertheless, the individual development of a sanctuary varied widely during the period 800 to 400 BC.[257] Once it was established, the settlement around it did not necessarily develop into an urban centre since this depended on the subsequent progress of the urbanisation process.

1.8 *Social and cultural development*

The social and cultural changes during the period 800 to 400 BC have been mentioned at times in the previous sections. The main aspects of these changes which correlate to economic transitions are:
1. the development from a ranked to a stratified society. Status strata in a ranked society are established on cultural criteria of esteem, stature and privilege while class strata in a stratified society are based on economic relations;[258]
2. competition during the stratification process of the 8th and 7th centuries BC. This competition materialised both in the possession of *keimeilia* which are the highly prized imported goods as well as in the imitation of these commodities;[259]
3. the assignment of class to those who were involved in industrial activities. I claim that it is not relevant for the Orientalising Period to assign artisans to a social niche which is actually being established;[260]
4. the general cultural transformation which involved features such as the introduction of writing, symposia and new technologies. The funerary ideology changed as well;[261]
5. the formation of early states through the progress of social stratification, the urbanisation process and of increasing control over territories.[262]

Another feature of the social and cultural development which should be specified before I examine pottery production in chapter II, concerns the differential evolution of the Latin and Etruscan civilisation. Both have their characteristic language and are located in neighbouring but dissimilar regions, that is Etruria and *Latium Vetus*. These regions constitute in this thesis central Italy along the Tyrrhenean coast and their differential evolution appears to be based on the inequality of territorial resources. The agricultural as well as the mineral assets of Etruria were superior to those of *Latium Vetus*.[263] Other disparities concern the socio-political evolution, mortuary ritual, religuous organisation and the differential trade networks.[264]

The Etruscans developed a political system of adjacent city states whose origins probably emerge during the early

---

[256] *cf.* Bouma and van 't Lindenhout 1996-1997; Kleibrink 1997.

[257] *cf.* Bartoloni 1989-1990; Edlund 1987.

[258] Wason 1994, 37-8.

[259] *cf.* section 1.1.

[260] See section 1.1.

[261] *cf.* Bartoloni 1989, 187.

[262] See section 1.6.

[263] See sections 1.5 and 3.5.

[264] In section 1.6, I have mentioned the difference in settlement nucleation for both regions. *cf.* Bietti Sestieri 1992 b.

Iron Age.[265] The polities were comparable social and cultural units in scale and in organisational complexity. The institutional features of Etruscan society did mature almost simultaneously at various centres in the region though the developments in southern Etruria seem to have been primary.[266] The congruous developments from the Early Iron Age established peer polities especially in Etruria. The interaction between peer polities incorporates all reciprocity between neighbouring autonomous, socio-political units which are usually located within a single geographical region.[267] As an interactive process it is recorded for advanced chiefdoms and early states. The concept of peer polity interaction has been frequently applied to the early state module of Etruria of the 6th century BC but for perceptible reasons less to the developments in *Latium Vetus*.[268]

In ancient *Latium* the evolution into city states was more diffuse because in general the polities developed on a more restricted scale. This makes it difficult to outline stable territories with primary and secondary centres.[269] Rome is the exception and emerges as the highest-order centre of *Latium Vetus* during the 7th and 6th centuries BC. The emergence of a highest-order centre in ancient *Latium* implies that the polities did not develop into balanced socio-political units. When compared with Etruria, the polities in *Latium Vetus* seem to be directed primarily by their religious institutions which is demonstrated by the numerous Archaic sanctuaries which have been identified.[270] The institutional rivalry between the various centres in *Latium Vetus* is expressed in the vast succession of temples during a period that the necropoleis no longer functioned as an arena for personal competition.[271] At *Satricum* for example three religious structures could be identified during the 6th century BC, each rebuilt on a more monumental scale.[272]

The differential evolution of both regions is also expressed by the development of external trade and the quantity of foreign commodities. In volume the imports of Levantine and Greek goods in *Latium Vetus* is limited when compared to Etruria. Beijer has studied the Greek and local pottery in ancient *Latium* dated to the 8th and 7th centuries BC and concludes that '*hardly any new evidence has turned up to sustain a firm place for Latium in the network of international contacts during the Late Iron Age*'.[273] The area along the Tiber presents for ancient *Latium* the most abundant evidence for foreign commodities. The large quantity of regional imports during the 7th century BC which mainly consists of Etrusco-Corinthian wares and *bucchero*, is in contrast with the limited number of artefacts from overseas. The exchange is, therefore, primarily the result of contacts with Etruria. It appears that in ancient *Latium*, the communication with other communities in central Italy, especially with Etruria, are from the 8th century BC essential for both the local economy and for the flow of innovations rather than contacts with Levantines

[265] *cf*. Bietti Sestieri forthcoming.

[266] *cf*. Bietti Sestieri 1992 b, 21-75, 244-53.

[267] Renfrew 1986 a, 1.

[268] *cf*. Renfrew and Cherry 1986.

[269] *cf*. Bartoloni 1987; Bouma and van 't Lindenhout 1996-1997.

[270] For a chronological survey of Latial cult places see Bouma: Bouma 1996, Part III, Appendix A, 153-65. Sanctuaries in Etruria are presented by: Edlund 1987; *Santuari d'Etruria* 1985.

[271] See Bouma on for example, Lanuvium, the *Juno Sospita* sanctuary; Rome, Capitoline, Jupiter sanctuary; Rome, *Forum Boarium*, S. Omobone; Veii, Portonaccio sanctuary and the sanctuary at Velletri: Bouma 1996, part III, 43-4, 75-7, 84-6, 108-11, 112-4. Damgaard Andersen comments that for the decennia around 500 BC '*the most common type of building seems to have been temples, now much larger than before, and building temples can almost be considered an industry*': Damgaard Andersen 1993, 85. I refer to Colonna and Ross Holloway on the transition in burial customs: Colonna 1977; Ross Holloway 1994, 168-70.

[272] *cf*. Colonna 1984; Bouma 1996, 81-101; Maaskant-Kleibrink 1992, 108-46.

[273] Beijer 1995.

and Greeks.[274]

I have suggested in the section on the economic development that during the decades around 600 BC, the external trade became regulated with different means in Etruria and *Latium Vetus*. This implies political intervention and a significant stage in the formation of early states. In ancient *Latium* the mortuary ritual no longer materialised in lavish funeral gifts though it is likely that the elite found other ways of commemorating their ancestors. By the 6th century BC, grave furniture in Etruria remained important but became less affluent when compared to the previous century. This different distribution of the material wealth in both regions represents distinct social, cultural and political conditions. The Etruscan city states appear to be governed by an oligarchy which is revealed by the continuing furnishing of the family tombs and necropoleis.[275] The stratification process in Etruria seems to have matured into an advanced arrangement of distinct social classes. In *Latium Vetus* the social units seem to be slightly less well-defined and are predominantly incorporated in the *gens* which can be translated as clan. The *gens* consists of persons with a common name. Blood ties and common descent are not necessary for association. A *gens* has a hierarchical structure with a *paterfamilias*, the family connections and patron-client relationship. The institution of *gentes* is not particular to the social organisation of ancient *Latium*. Etruscans also had clans but the organisation into *gentes* seems to have had a special role in the social and cultural development of *Latium Vetus*.[276] Bietti Sestieri suggests on account of grave clusterings at the necropolis of Osteria dell'Osa, that the first indications of this development became manifest around 800 BC.[277] During the 7th and 6th century BC continuing stratification and competition resulted in the emergence of patricians which were members of clans that had obtained privileges. These patricians regulated the institutions of Rome and other major centres in ancient *Latium*.[278]

The last phenomenon I would like to discuss in this section, is early state formation. As a process, it involves various social and cultural aspects which can be related to specific economic conditions between stratified groups. An early state is defined by Claessen and Skalník as '*a centralised socio-political organisation for the regulation of social relations in a complex stratified society divided into at least two basic strata, or emergent social classes - viz. the rulers and the ruled -, whose relations are characterised by political dominance of the former and tributary obligations of the latter, legitimised by a common ideology of which reciprocity is the basic principle*'.[279] This description introduces features such as tribute, reciprocity and ideology which can be transferred to conditions in central Italy. For example, in many early states priests form a separate group that acquired political authority[280] while in central Italy the increasing significance of the religious institutions is attested for the 7th and 6th centuries BC. Another characteristic of early states is the limited role of conquests though they became more important with advancing state formation.[281] Some of the secondary sites discussed in this study, disappear during the late 6th and 5th centuries BC and this may indicate the growing relevance of conquests. Warfare usually has distinct economic

[274] Bietti Sestieri 1992 b, 217.

[275] Oligarchy denotes in this context a political organisation of a few individuals of a privileged class which govern autonomously.

[276] Bietti Sestieri 1992 b; Cornell 1995, 84-5, 143-4, 176-9, 245-51, 289-91 and Smith 1996. Torelli presents some data for the difference between the development of *gentes* in Etruria and ancient Latium: Torelli 1988 b, 242-7.

[277] Bietti Sestieri 1992 a; 1992 b.

[278] Cornell considers that an oligarchy was established at Rome during the late 4th century BC: Cornell 1995, 372-3, 377-9. On the other hand Torelli hardly differentiates between the upper class of Etruria and *Latium Vetus*. He mentions that oligarchies became established during the 5th century BC in both regions: Torelli 1988 a, 63-68.

[279] Claessen and Skalník 1978, 640.

[280] Claessen and Skalník 1978, 647.

[281] Claessen and Skalník 1978.

consequences since it manipulates resources and promotes intensification. However I will only briefly discuss combats and wars between the various polities in central Italy. They will be merely mentioned when it is possible to relate them to specific settlements or when they provide an argument for significant changes in the general Mediterranean trade network.

Early state formation is furthermore distinguished by the definition of property and the obligation to yield tribute. The cross-cultural analysis of Claessen and Skalník shows that this formation is not based on actual private ownership of resources but that it develops from communal means.[282] Increasing centralisation or state formation would advance private possession of the means of production but the majority of early states is characterised by poorly defined private ownership. Tribute was due to the upper social stratum but seldom arose from actual possession of resources. Thus, it is possible to encounter within the early state, settlements where the residents were free to organise their activities though they had to pay tribute or render occasionally services.[283] It is probable that in central Italy resources originally belonged to the *gentes* or clans and were only gradually converted into actual family property. For example, the appropriation of land at Rome by wealthy citizens seems to be a process that matured during the 5th century BC.[284] Legal private ownership of land is shown by the Twelve Tables and increasing differentiation in family property must have assisted debt-bondage and the marginalisation of the poorer members of society who eventually may have become unfree dependents instead of *clientes*.[285] This account indicates that the transition from communal to private property developed during the period 800 to 400 BC. The definition of ownership of means of production is a prolonged process which signifies that it was not concluded in the 5th century BC. For sure it was not concluded during the Orientalising Period. The wealthy tombs of the late 8th and 7th centuries BC record increasing social distinction and differentiation in access to resources but they do not substantiate unbounded appropriation and legal family landholdings. The transformation from communal to private ownership of resources is characterised by an intermediate stage of reciprocity and tribute which reflects the *clientela* system of central Italy and curbed the social tensions between those who could not participate in status building activities and those who could.

[282] Claessen and Skalník 1978.

[283] See for example, the arrangements at the settlement at Lago dell'Accesa: section 3.6.6.

[284] *cf*. Smith 1996, 192.

[285] Smith 1996, 189-210 and Cornell 1995, 280-6.